THE BUILDER

A RECORD OF ARCHITECTURE AND CONSTRUCTION.

VOL. CXIII.—No. 3899. OCTOBER 26, 1917.

ARTISTS AND CRAFTSMEN.

UNDER the title of "A Plea for the wider Use of Artists and Craftsmen," Professor Rothenstein delivered a lecture before the Technical School of Art at Sheffield last autumn, which has since been issued as a pamphlet, and contains much that is good and well expressed, but omits to state facts which seem to somew hat vitiate the conclusions arrived at. The Professor's first statement, that art is "governed by the same laws of balance and proportion as is everything else in the world, and to know the true from the false in art is neither more nor less difficult than to value what is noble and what is mean in life," is a statement which can only be accepted if coupled with Marsh Phillipps's definition that art should be an outcome or presentation of contemporary life. If, for example, pictorial art is limited to depicting the life which surrounds us, Professor Rothenstein is on fairly firm ground, except in so far that the public who have no technical knowledge of the processes of art cannot be expected to judge of the results of those processes as they can of the ordinary actions of mankind, which they assess by standards used and accepted by them in their own lives. Whether a man does right or wrong, it is usually more or less pure casuistry to state that he is in doubt what he ought to do, while many may honestly say they do not know whether a form of artistic expression pleases them or not. The limit of responsibility in art matters which the City has felt towards its citizens is defined as the organization of annual exhibitions of contemporary pictures. This is perhaps so, though we should go further and say that the ordinary municipality, being representative of average opinion, felt no responsibility at all in the matter, and considered in building a picture gallery it was providing an admirable example of its liberality and refinement in taste.

But we dissent altogether from the statement that the purpose of art was to fulfil "the urgent natural craving for creation of one kind or another which is felt by certain natures. The encouragement of art should surely mean, first and foremost, the encouragement of this vital creative faculty." We believe that pictorial art is more the outcome of a desire to portray and represent than to create, and in architecture and the applied arts more the desire to fulfil certain practical wants in the best and most pleasing manner possible than anything else. The desire to "create," where it exists, is, we believe, the greatest bane of the artist or the architect. It is responsible for the work of the post-impressionists, futurists and cubists in painting, for *l'art nouveau* in architecture, and for Mr. Epstein's "Venus" in sculpture, which hardly seem to come within the category of art at all. With the extraordinary exception of the Louis Quinze style in France, we know of no form of architectural art which can even distantly be described as being "created." There seems to be little room for creations in art unless we use the expression wrongly to describe what is of unusual merit or distinction. Invention and creation are near akin, but can any of us imagine anything affecting the world of art which would even distantly resemble the making of the first clock, or of the steam engine or electric telegraph? The fundamental ideas of lintel, arch, buttress, and even vault are so simple and obvious that they might, in their rudest forms, have occurred to a child, while their subsequent development and treatment have exercised the skill of generations of builders, artists, and craftsmen. Professor Rothenstein indulges in the somewhat time-worn scorn of the modern method of trying to arrive at historical accuracy in matters of costume. "When art is, in essence, dignified and austere, it does not need to borrow the properties of the green room to turn it into religious art." We believe that had our forefathers in the past the knowledge that we now possess, the Italian and Flemish painters would no more have refused to utilize their knowledge of costume than the men of to-day do, and that the intrinsic interest and value of their work would not have been depreciated thereby. Our portrait painters are condemned because they paint pictures surrounded by the "objects made by the brains and hands of other times," but to make such a criticism good surely it should be proved that the painter has rejected modern surroundings of greater or equal æsthetic quality. Such surroundings are, he says, "prescribed by connoisseurs, as visits to Hamburg and Vichy are advised by the physicians," a statement we question, believing that the painter's choice is usually dictated by qualities of form or colour which appeal to him as being suitable.

The Professor reasonably criticises the expenditure of money on old masters to the exclusion of the employment of the best contemporary talent, but here again he goes a little too far. We doubt the accuracy of his statement, "Had the last generation made proper use of such eminently national painters as Burne-Jones and Madox Brown for public purposes, of Watts, Alfred Stevens, Rossetti, William Morris, Walter Crane, each using his own particular gift in the service of national, religious or civic institutions, England would have been a living example of what a great country stands for." We believe it would have needed greater men than these to give us art comparable to that of the best of past ages, for with one exception we doubt if those mentioned, great as they were, could be considered within the first rank of the artists of the world. That they had insufficient encouragement is another proposition, which we are willing to grant. We are reminded of our sins in collecting old furniture, and some of our able younger craftsmen are mentioned by name as men whose works should be accepted in their place, and here we arrive at the crux of a difficulty. We have seen at various exhibitions of arts and crafts, and other places, furniture evidently designed with much thought and refinement, furniture which is the work of to-day in so far as it suggests nothing that is traditionally familiar with us, but we confess we have seen little we should care to possess. Without attaching value to antiquity *per se* we prefer old furniture or that made on similar lines. We believe if our craftsmen tried to "create" less they would make more headway, and that changes in the form of design worth having will come slowly and without effort, as they have come in past ages in the whole world of art, whether we are dealing with architecture, sculpture, painting, or the applied crafts. After all, we cannot incorporate the spirit of the age in the form of a table leg or even of a range of columns. Our cities may be beautiful or the reverse, but can we really expect them, with the Professor, to represent "high ideals of justice"?

We would, in conclusion, take refuge in lowlier aims. "Whatsoever thy hand findeth to do, do it with thy might," seems good enough; and should we not be possessed of a flood of creative energy which obliterates boundaries, we may even, without exceeding shame, imitate what is really admirable and suited to our immediate purpose even if it be not saturated with "the spirit of the age"—whatever that may mean when applied to abstract or concrete form.

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We have before us a long description of the ceremony with which the new church of All Saints at Basingstoke was dedicated, but although there is a lengthy description of it and we are told who carried out the heating and electric light, the architect, Mr. Temple Moore, is only mentioned as having supplied designs for the altar "ornaments" to the Artificers' Guild. Had it not been necessary to mention in a careful and systematic manner most of those who supplied fittings, we assume that space would have been saved, and all mention of the architect omitted. Mr. Robert Weir has pointed out in a letter to the *Hants and Berks Gazette* that the architect of an exceptionally fine church deserves almost as much recognition as the photographer who took a view of it, but we suppose this singular state of things will continue unless really interesting information, such as the name of the manufacturer who supplied the guttering, is withheld from the reporter, in which case he may mention the architect to make "copy."

Building in Glasgow.

As compared with a total amount of £2,000,000 spent 20 years ago, the value of building works authorised in Glasgow during the last year was only £40,000, apart from "war work" establishments in connection with which £547,457 was expended. The previous year's total was £435,442. No shop, dwelling-house, church hall, or school was authorised by the Dean of Guild within the year. The number of unlet houses last Whitsuntide was less than half that of a year previous, and since 1913 there has been a decrease of unlet houses from 10·33 per cent. to 1·79, and the last figure includes many houses which were unlettable. At a meeting of the Guild the Dean stated that he did not propose to deal with the extreme views of those interested in the question with the undue pessimism of the builder or the Utopian and impracticable notions of the reformer who thought he could bring about a perfect social state. He thought that the municipality had as much right to assist in the solution of the housing question as in the provision of a good water service. If all our municipalities were as practical and businesslike as that of Glasgow we should have a firmer faith in municipal enterprise.

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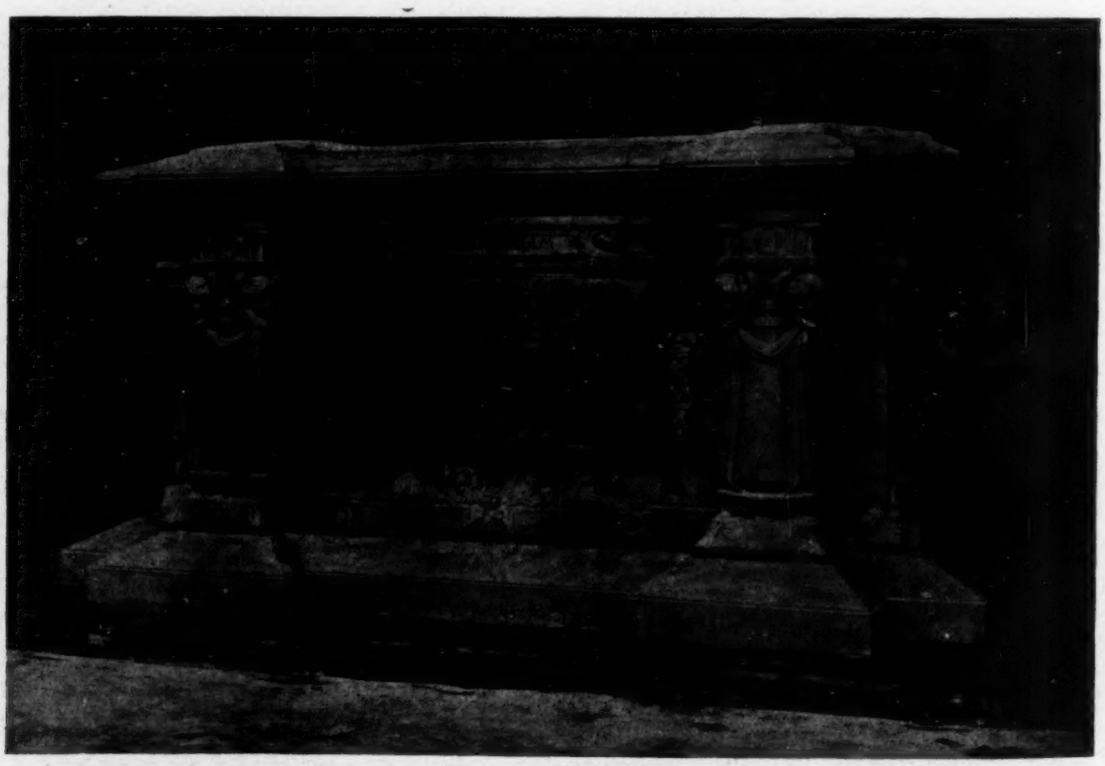

[This monument is to be erected over the family vault of Mr. A. Maddell of Glasgow. The work was designed and modelled by Miss Florence H. Steele. Executed in Hoptonwood stone by Mr. C. Rutland.]

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THE following is the conclusion of the address by Mr. John B. Gass, J.P., F.R.I.B.A., President of the Manchester Society of Architects, delivered on the 10th inst., the first part of which we gave in our last issue :—

Architecture and Education.

"As democracy will rule, the fostering and cultivation of a rightly informed and cultivated mind among the people will lead to a true civic pride, which will stir up amongst the inhabitants a pride in their cities, towns and villages and be most important for the future of architecture. To the children architecture and history should be taught together in all the schools as part of their general educational course, for history is expressed in architecture, and both would be made more interesting and living by a true combination. The future would be more hopeful by understanding minds then seeing the expression of their own time in the modern buildings growing around them, and insistence on the expression being right and true. The Institute's memorial of July last to the President of the Board of Education is one of the marks of the awakening spirit in our midst. It welcomes and urges the encouragement of the natural activities of eye and hand in the teaching of our day schools. It specially asks 'that all may be taught to draw and that manual work and comprehension of the common duties of life should be infused. That a town spirit should be inculcated as the best basis on which to build up a national spirit, and that something should be done to bring out the idea of design and strengthen initiative in the minds of the children.' With a democracy truly educated in that spirit, and profiting by it, all things grow possible; thought range gives a wider scope than now with the narrow view which prevails. Citizenship will have a real meaning and the communal feeling be more fully developed in the civilisation of the coming time. A sense of the value of surroundings in the minds of the people for their living, their education, their work, their religion, and their pleasures will infuse life into architecture, which will then dare to confront and break through the old and the time-endeared, while profiting by their good examples.

"The higher the outlook of the nation, the greater the training and skill required by those who express it in the architecture of the time. For our profession to hold its place in the ever quickening march of events, a general high standard will be even more necessary than at present. All endeavour must be made to make the profession of architecture attractive to the best of the young men of the nation, and then see that the highest special educational facilities are placed within the reach of those who can profit by them. For on the ability of the student to profit by special education depends the success of that education, and its practical value in the world. There have recently been discussions at the Institute on architectural education, which have been very interesting. The virile suggestions from the Architectural Association School have an artistic as well as a practical outlook for the present and for the future, rather than the over-worship at the shrine of the past. It was well stated that schemes of architectural education will always remain schemes unless they coincide fairly with the sense of values of the nation at large, and also that the constructive side and artistic side of education should be run together. With both of these statements I am in full agreement. Many of the speakers, however, dealt mainly with the theoretical, both artistic and scientific, part of professional training, which is only the beginning of an architect's education.

"Little was said of the vital necessity of a thorough training in the practical and business side of our profession, the only way to make a college or special school education of the real help in a man's career it ought to be, and of preventing his having a false and not a true sense of values. An architect has to be in touch with actualities, and the use of practical common sense with experience is essential to a successful career. My personal experience of college-trained youths is not very convincing, unless such training has been simultaneous with office work, when it is of the greatest help and leads to efficiency.

"It is probable that the education of the future will have to take into account the State and military service which will be required from our young men at the most impressionable and valuable time of their lives; one, two, or three years from the age of about 18. In the future arrangements of State service, consideration should be given to students in all the learned professions, so as to make their specialized training of value to the State. The effectiveness of the scheme of architectural education and the personal capacity of the students will be important factors in determining how far such consideration will be given and maintained to our profession. The branch of State or military service which will utilize the specialized preliminary training, and enable our students to take it forward, should be organized in the national interests.

"Surely those in authority will have learnt the value and necessity of specialised training for efficient service, both public and private, and how to utilize such special training in the country's interest. The proper organisation of the brain power of the community is an absolute necessity if our nation is to maintain its position in the world. That is true national service when each man does the work for which he is best fitted. We have much to learn from our enemy in the way of efficiency of service and organisation. May our nation have wisdom to profit thereby while retaining the ideals which form such a wide gulf between us and our enemy, and for which our young men are making such tremendous sacrifices, and the country is being burdened with an ever increasing and truly appalling debt, the taxation for which will cripple its activities for generations. It can only be met by greater efficiency, better organisation, a finer national spirit, and more community of interest in the whole nation.

Registration.

"For the greater period of the generation I have known the question of the desirability of the National Registration of Architects has been under discussion. It is under active discussion now, and there is undoubtedly an ever growing feeling of the necessity for it throughout the country. After many years of consideration and detailed discussion of the 1905 Bill by the Institute Committee, hearing evidence, on which a report was prepared, and obtaining legal advice, the Institute at a special meeting on January 5, 1914, finally decided to proceed with a scheme of registration by charter as the only practical solution of the question which was considered likely to be agreed to by the authorities at that time. The council's proposals for the Charter were presented to a special meeting on April 27, 1914, and afterwards published in the *Journal*. This new Charter provides, among other things, for the constitution and maintenance of a register of persons qualified for the practice of architecture who would have the right to call themselves 'Registered Architects' or 'Chartered Architects.' The register in chief would only be of value as a register of qualified architects, though it might be the first definite step towards obtaining national recognition of architects either directly through a Bill or indirectly through the Local Government Board and other departments of State. The granting of the Charter by the Privy Council would not in any way preclude the Institute from going to Parliament hereafter for a National Registration Bill. The whole matter, however, remains 'hung up,' as, to a personal protest against the Charter being applied for in the form agreed; the President wrote on August 10, 1914, that the Council would not take any steps in connection with it at the present time.

"The reorganisation of our national life may now give opportunity for presenting to Parliament a satisfactory Registration Bill, though undoubtedly there are many serious obstacles to its obtaining approval. National registration is the natural outcome of a proper educational system for architects, and in the public interests it is increasingly necessary. In the future, and now for the young men, examination must precede any scheme of registration—examination of the results of the theoretical and practical training of the individual. No one is fitted for the manifold duties the profession of a practising architect demands who has not the ability to profit by training and cannot concentrate his mind sufficiently to pass the ordinary examination in architecture and give evidence of his ability to design. Registration of architects would be a preliminary step in the efficient organisation of our profession, and, while conferring special privileges, must of necessity involve special duties, as with other learned professions, and the scope of influence thereby be greatly widened. As a State-recognised and organised professional body architects would always be available to be called on to carry out the special duties true national service requires. The views of the architectural profession would receive the same consideration as is rightly given to the views of the medical profession, and they would be taken into the public counsels in a way heretofore undreamt of. The public would be protected against inefficiency and in the national reorganisation scheme a proper place should be found. Specialism would undoubtedly prevail as in all other professions; there are diversities of gifts, and the spirit of emulation will grow stronger as the position of the profession becomes better in the State and to it are attracted the best minds of the time. The highest aims and ideals will have a greater chance of realisation, and the general average will be even better than now by the higher general standard which will arise; for there must be constant progress in all departments of our national life if Britain is to maintain her position in the world. In all the social betterments of the people, the improvement of their surroundings both in regard to their working and living and to promote the health and efficiency of the whole nation, architects' services are necessary. No plan for any building should be approved by any authority unless presented by a qualified architect, who should also give a certificate of its proper completion. As a doctor has to give a certificate for death, the architect would give a certificate for life—that the building was in accordance with the requirements of satisfactory life if properly used. All the public architectural appointments (senior) should only be open to qualified architects.

"The State of New York, in which such excellent architectural work is now being done, has given a good lead in its architects' registration law, and the State of Wisconsin recently adopted it too. All persons practising as architects have to be registered. Those actually engaged in the practice of architecture at the time of the passage of the Bill received certificates without examination. But all future architects have to show to a State board of examiners their general and special architectural qualifications and knowledge with at least five years' professional experience. A diploma of graduation from a recognised architectural school is accepted in lieu of the State examination, followed by three years of practical experience. Registration in another State or country having satisfactory standards is also accepted. State registration of architects has been brought into the region of practical politics. In the knowledge of the things achieved is the great hope for the future.

Reconstruction and Reorganisation.

"Reconstruction after the war is becoming a matter of vital interest in all directions, and particularly will be so to the architectural profession in the transition years of the coming time. Building will be materially affected by the general economic situation which will call for organisation on a bigger scale, and in larger units, for purchase, sale and management in al

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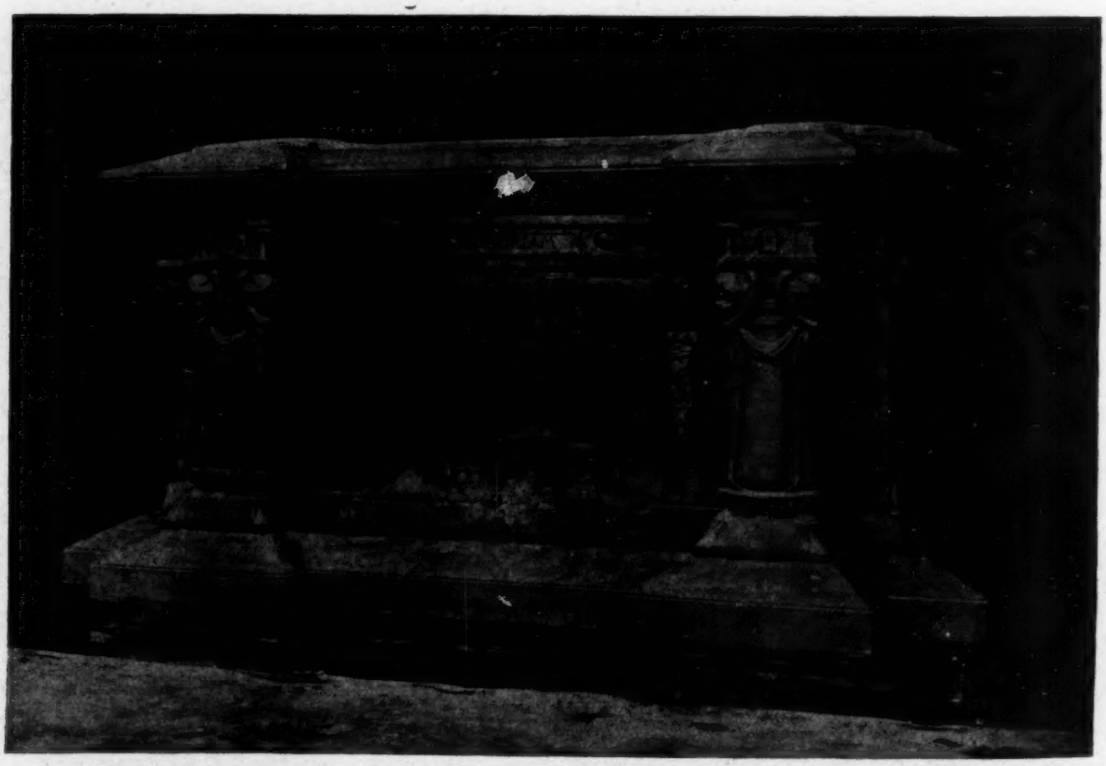

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"Surely those in authority will have learnt the value and necessity of specialised training for efficient service, both public and private, and how to utilize such special training in the country's interest. The proper organisation of the brain power of the community is an absolute necessity if our nation is to maintain its position in the world. That is true national service when each man does the work for which he is best fitted. We have much to learn from our enemy in the way of efficiency of service and organisation. May our nation have wisdom to profit thereby while retaining the ideals which form such a wide gulf between us and our enemy, and for which our young men are making such tremendous sacrifices, and the country is being burdened with an ever increasing and truly appalling debt, the taxation for which will cripple its activities for generations. It can only be met by greater efficiency, better organisation, a finer national spirit, and more community of interest in the whole nation.

Registration.

"For the greater period of the generation I have known the question of the desirability of the National Registration of Architects has been under discussion. It is under active discussion now, and there is undoubtedly an ever growing feeling of the necessity for it throughout the country. After many years of consideration and detailed discussion of the 1905 Bill by the Institute Committee, hearing evidence, on which a report was prepared, and obtaining legal advice, the Institute at a special meeting on January 5, 1914, finally decided to proceed with a scheme of registration by charter as the only practical solution of the question which was considered likely to be agreed to by the authorities at that time. The council's proposals for the Charter were presented to a special meeting on April 27, 1914, and afterwards published in the *Journal*. This new Charter provides, among other things, for the constitution and maintenance of a register of persons qualified for the practice of architecture who would have the right to call themselves 'Registered Architects' or 'Chartered Architects.' The register in chief would only be of value as a register of qualified architects, though it might be the first definite step towards obtaining national recognition of architects either directly through a Bill or indirectly through the Local Government Board and other departments of State. The granting of the Charter by the Privy Council would not in any way preclude the Institute from going to Parliament hereafter for a National Registration Bill. The whole matter, however, remains 'hung up,' as, to a personal protest against the Charter being applied for in the form agreed; the President wrote on August 10, 1914, that the Council would not take any steps in connection with it at the present time.

"The reorganisation of our national life may now give opportunity for presenting to Parliament a satisfactory Registration Bill, though undoubtedly there are many serious obstacles to its obtaining approval. National registration is the natural outcome of a proper educational system for architects, and in the public interests it is increasingly necessary. In the future, and now for the young men, examination must precede any scheme of registration—examination of the results of the theoretical and practical training of the individual. No one is fitted for the manifold duties the profession of a practising architect demands who has not the ability to profit by training and cannot concentrate his mind sufficiently to pass the ordinary examination in architecture and give evidence of his ability to design. Registration of architects would be a preliminary step in the efficient organisation of our profession, and, while conferring special privileges, must of necessity involve special duties, as with other learned professions, and the scope of influence thereby be greatly widened. As a State-recognised and organised professional body architects would always be available to be called on to carry out the special duties true national service requires. The views of the architectural profession would receive the same consideration as is rightly given to the views of the medical profession, and they would be taken into the public counsels in a way heretofore undreamt of. The public would be protected against inefficiency and in the national reorganisation scheme a proper place should be found. Specialism would undoubtedly prevail as in all other professions; there are diversities of gifts, and the spirit of emulation will grow stronger as the position of the profession becomes better in the State and to it are attracted the best minds of the time. The highest aims and ideals will have a greater chance of realisation, and the general average will be even better than now by the higher general standard which will arise; for there must be constant progress in all departments of our national life if Britain is to maintain her position in the world. In all the social betterments of the people, the improvement of their surroundings both in regard to their working and living and to promote the health and efficiency of the whole nation, architects' services are necessary. No plan for any building should be approved by any authority unless presented by a qualified architect, who should also give a certificate of its proper completion. As a doctor has to give a certificate for death, the architect would give a certificate for life—that the building was in accordance with the requirements of satisfactory life if properly used. All the public architectural appointments (senior) should only be open to qualified architects.

"The State of New York, in which such excellent architectural work is now being done, has given a good lead in its architects' registration law, and the State of Wisconsin recently adopted it too. All persons practising as architects have to be registered. Those actually engaged in the practice of architecture at the time of the passage of the Bill received certificates without examination. But all future architects have to show to a State board of examiners their general and special architectural qualifications and knowledge with at least five years' professional experience. A diploma of graduation from a recognised architectural school is accepted in lieu of the State examination, followed by three years of practical experience. Registration in another State or country having satisfactory standards is also accepted. State registration of architects has been brought into the region of practical politics. In the knowledge of the things achieved is the great hope for the future.

Reconstruction and Reorganisation.

"Reconstruction after the war is becoming a matter of vital interest in all directions, and particularly will be so to the architectural profession in the transition years of the coming time. Building will be materially affected by the general economic situation which will call for organisation on a bigger scale, and in larger units, for purchase, sale and management in al

industrial, commercial, and manufacturing concerns. The shortage of materials, which is being so much felt now in the building trade, will become greater, as there will be a keener world-competition for them. The most efficient plant, organised in the best way, will be required to increase and cheapen production, and the main effort of the national life for some time will evidently be an industrial one.

"There is no profession which will be more affected by the reconstructional conditions after the war than the architectural profession, and reorganisation and reinstatement of our younger men on active service at the conclusion of hostilities will be a very serious problem. The treatment meted out to so many of them by the military authorities will make added difficulties; they have not been utilised for any branch of their professional work, as they ought to have been, and they may have lost touch with it. The Government has generally discounted the position of architects, which has already had an effect. It is only by combined effort that reinstatement of the professional position can take place. Fortunately the national business mind, apart from self-centred militarism and officialism, is sound, and it is in this way that the reinstatement of architects in civil life will obtain, as they prove themselves able to cope with the new conditions. There is grave anxiety on all hands to make the position of our younger men as favourable as possible on their return to civil life. Release from Army conditions will be very gradual and may take years to accomplish. The Roll of Honour of the brave young men who have made the great sacrifice is an ever-increasing one; many of those with whom I have been associated are on the roll—the pity of it all!—some of those who return may not be fitted to take up the arduous duties private practice involves. Some who come through safely may obtain official positions, and some will drift into other occupations. But I hope there will be many whose enthusiasm for architecture has been stimulated, and it is in the interests of the profession that the personnel of its practising members should be of a high average. Efforts are being made by the Institute War Committee and its Reorganisation Committee (a very active and capable body) to help to achieve this. The Allied War Committee in Manchester, through its energetic hon. secretary, Mr. Francis Jones, is getting into communication with all army-serving architects, assistants and pupils from this area, whether members of the Society or not, and on their answers will depend the course which can be taken with advantage to themselves and the profession as a whole. Unfortunately there seems a long way to go yet before peace is in sight.

Lady Architects.

"The position women have taken in the work of Britain during the war-time shows their ability to rise to the occasion in a wonderful manner and successfully perform duties and carry on operations in connection with work of all kinds with which they had never previously been associated. In all this work they have come to stay. We admire their abilities and resourcefulness. Much has been said in the Press—irresponsible though it may be—of the desirability of ladies adopting the profession of architecture. Lady architects will be welcomed in our profession as they are able to rise to a high standard of efficiency.

"For many years some of the architectural schools have been open to lady students, and though there have been students, few have gone forward with a professional career. Other schools are opening their doors to them now. The Institute examinations have practically always been open to them, but, while there have been those who, up to recent times, have presented themselves for examination, only two have been successful, and they were registered as students in 1895–6, and passed the examination for Associateship in 1898 and 1900; they have not proceeded to Fellowship, which requires a record of executed work.

"I met a few lady architects in the United States some years ago, but in general practice their careers were not of much promise. It seemed, however, that with proper training ladies might be successful, and my firm encouraged the idea, but those I have had to do with, and other lady students I have met, although quite capable in many ways, did not appear to develop the constructional faculty or properly appreciate the practicalities of work. There are so many difficulties which arise in the practice of architecture as a profession and so many and varied the opportunities of trouble in dealing with work, that, except to specialise, there is little to attract ladies in our profession; there are so many other professions which give to ladies with special abilities opportunities for service of great value. But none the less will we welcome them as co-workers whenever they help to maintain efficiency and to keep the high architectural standard to which we aspire.

Housing.

"The question of housing will be considered at one of our early monthly meetings, and opens out a wide field for discussion of which our members will doubtless take advantage. A preliminary Conference of the Allied Societies was held in Manchester on March 31st last, when the President and Secretary of the National Housing society attended, and the proposals of the Architects' Re-organization Committee were practically adopted and became the resolutions of the National Housing Conference held at Oxford on April 9th. The Institute Housing Committee has approved of the Manchester Conference's suggestion for allied committees in the various centres in close touch with the R.I.B.A. Committee. Resolutions have already been sent on the subject from our Committee to the Institute. Two of our Council were also appointed on the Organising Committee for Housing after the war, which has its centre in Manchester. A very interesting report from this committee has been issued to which attention is particularly called.

"In the provision of cottage houses for the people the services of practising architects have been used to a very limited extent only, with consequent unsatisfactory conditions in many ways. A State-made scheme of house building seems inevitable. Whether it will be carried out directly by the State, by local authorities, by private enterprise, by public utility societies and similar bodies, by some form of co-operation and co-partnership with a view of the occupier becoming the owner, much money will have to be found from public funds, with the wastage inevitable from such a manner of financing cottage building. Twenty millions has been the amount mentioned as necessary for housing schemes, but if carried out in the usual State-managed ways and made thoroughly effective, a much larger sum will be requisite. Where there is public ownership, the experience in Ireland has shown that the cost of maintenance and the general upkeep of cottages, in rural districts particularly, prevent the possibility of anything approaching a satisfactory financial result. I was also informed there that the arrangements and supervision of the buildings were not by architects; the results were, therefore, not so satisfactory as they should have been. The provision of better dwellings has undoubtedly been an advantage to the people, and, though there is prosperity in the land, there is little political peace and content.

"It is desirable that, so far as possible, cottages in connection with housing schemes should be erected after the war by private enterprise, public utility societies, co-operation and the like. The building of cottages by the State or municipal authorities should only be undertaken as a last resource. The lay-out of the buildings should be on town-planning lines, with such modifications as seem desirable for the various areas dealt with. Financial and other facilities should be given by the State to approved schemes, arranged and carried out by and under satisfactory professional supervision through industrial banks or municipal, rural and other authorities, with a view of the occupiers becoming owners of the houses through purchase by rental payments or otherwise, and the Small Dwellings Acquisition Act, 1899, should have amendments of such a character as to make it productive of greater benefits. For the effective carrying out of such schemes there would have to be alterations in the Land Laws, the Finance and other Acts, and also in local Building By-Laws, which prejudicially affect cottage building carried out on sound lines.

"A very important meeting of the Institute Housing Committee was held in London on Thursday, October 4th, when important proposals were under discussion. The very active co-operation of the Allied Societies and their members will be requisite, and, in the best interests of the profession, from a national point of view particularly, it is necessary that there should be an adequate response.

"I have spoken of a few of the many things affecting our professional life in the present and for the future, but in no way have I exhausted the topics which are of general interest to all practising architects; among these the arrangements for the proposed Building Trade Parliament merits attention. Some of our members who are to read papers at our monthly meetings will probably refer to some of them.

The Old Infirmary Site in Manchester.

"The utilisation of the Old Infirmary site in Manchester has become a matter of national interest in our profession and continues to exercise the vacillating minds of the City Council. The recent decision to make it one of the tram terminals has brought the matter a step forward, but in an attempt to please the upholders of the three main schemes—art gallery and library, open space, tramway terminal—no one was satisfied, and the members of the Council wisely left themselves liberty of action in the future, as it undoubtedly will be required. Since the publication of the plan of the Traffic Congestion Committee Scheme, Sir Thomas Beecham's offer of a great opera house to Manchester opens out another vista. The Town Planning Committee of the Manchester Society of Architects have had the matter under consideration for some time and have prepared plans and made suggestions for dealing with both the site and the tramways. Proposals were understood to be in the air to make the site a great tramway centre, and on March 2 last the Council of our Society passed a resolution protesting against the utilisation of the Old Infirmary site as a tramway centre and pressed for the carrying out of the scheme for which the Infirmary site was specially purchased.

"It must be realised that nothing can stop the development of the tramways system in Manchester, with its ever-increasing area, except a comprehensive underground railway scheme, and the time is becoming ripe to take it into serious consideration for the near future. To that we must look to avoid disfiguring the best of the open spaces of the city by forming them into tramway terminals with their hopelessly inartistic though undoubtedly useful shelters for the waiting crowds.

The Jubilee Celebrations.

"It was to me the vision of a dream, but with prospect of realisation ever remote, that, during the second year of the presidency to which you have done me the honour of election, the Manchester Society of Architects might have been able to worthily celebrate together the coming of peace to the world and the jubilee of the Society. But the end of the war is not in sight and our nation has much farther to go; the road is still rough and the way still long; but none the less will the nation and her great Allies travel it to victory, with a good heart and a high sense of the justice and right of the great cause for which such tremendous sacrifices are being made by its sons and daughters. While doing all in our power to uphold the national interests and cheerfully making such sacrifices as are necessary, we have our professional position to maintain; those who are left in charge must worthily do this and be not slothful in the business of it, but fervent in spirit. The future holds great things; however distant our opportunities for renewed activities may be, we still say of our work—

'Oh, world not weary or old—sweet world everlastingly new,
Speed fresh pioneers to battle—there is infinite work to do.'"

GENERAL NEWS.

An Architect's Estate.

The late Mr. James B. Broadbent, of 15, Cooper-street, Manchester, architect, has left estate to the value of £30,314.

Gift to Bristol University.

Mr. Henry H. Wills, a director of the Imperial Tobacco Company, has presented to the University of Bristol, property known as the Royal Fort House and grounds, covering nine acres, adjoining the present site of the university buildings, for future extensions. A part of the new site has already been marked out for the purpose of the department of physics, and another for that of a residential college.

War Memorial Plaques.

Progress, it is officially announced, is being made with the scheme for presentation of a memorial plaque to the next-of-kin of officers and other ranks who have fallen in the war. Designs for the plaque have been invited, but in order to give ample opportunity to members of the Forces serving overseas and artists resident in the Dominions, the competition will not be closed till the end of the year.

Proposed Opera House for Manchester.

With regard to Sir Thomas Beecham's proposal to build an opera house for Manchester, provided the City Council find him a suitable site, it is stated that Sir Thomas, before making his formal proposition to the Lord Mayor, as head of the Corporation, proposes to call a few representative members of the Council together to confer with him on the subject.

A French Memorial to Airmen of the Allies.

It is proposed to erect in France an Allied memorial to the airmen who have fallen, and the editors of the *Nouvelle Revue Nationale*, 11 bis, Impasse de la Visitation, Paris VIIE, have opened a subscription list. They will be glad to receive the exact names and military rank of any British airmen who are known to have died on active service in France, so as to correct and supplement such details as are already in their possession.

Westminster Hall.

In the House of Commons, on Tuesday, Sir A. Mond, in answer to a question by Mr. King as to the progress which was being made with the roof of Westminster Hall, said that two trusses and two bays had been completely finished, two further trusses and two additional bays were nearly completed and a further four trusses and three bays were about to be commenced. Spraying had been adopted in dealing with the eradication of the *Xestobium tessellatum* and the work of restoration would be proceeded with slowly during the war.

Recent Discoveries at St. Paul's.

At St. Paul's Chapter House, on Wednesday last week, Canon Alexander, in speaking of recent discoveries at St. Paul's, said it had been a revelation to know the condition of the south-west pier, and they hoped now to get on with the work on the south-east pier. They had learnt a great deal from experiments. They had weighed the dome and had produced a means of measuring the "cracks" to the 5,000th part of an inch. A document unearthed showed that at the end of the eighteenth century the Cathedral authorities were confronted with a very similar problem to that which they had to meet to-day. It was a dream of his, Canon Alexander added, that a life-size statue to Sir Christopher Wren should be erected in the neighbourhood of St. Paul's—possibly near Amen-corner, and he hoped that that would soon materialize.

The Housing Problem.

At a labour conference on the housing problem held in Dundee, recently, a letter was read from Mr. Churchill, in which he said that the war, which had involved the general cessation of building operations and the congestion of large numbers of workers in special areas, had greatly intensified the evil of the housing question, which was a serious one before the war, especially in Scotland, and that these causes would remain in operation for some considerable time after the war. There would be a period, Mr. Churchill stated, during which it would be manifestly impossible for private enterprise to cope with the demand for healthy and decent homes, and the Government recognized that it would be necessary to afford substantial financial assistance from public funds to local authorities who were prepared to carry through, without delay, at the conclusion of the war, an approved programme of housing for the working classes. The need was recognized by men of all parties.

The Surveyors' Institution.

The ordinary general meetings of the Surveyors' Institution (incorporated by Royal Charter) during the coming session, have been fixed for November 12, and December 10, 1917, and January 14, February 25, April 8, and May 6, 1918. The date of the Preliminary Examination is January 14 and 17, and that of the Professional Examinations, March 18–22, 1918. The President, Mr. Arthur Lyon Ryde, will deliver his opening address at 5 p.m. on November 12. Other papers which have been arranged are, "Agricultural Executive Committees and their Work," by Mr Harold V. Raffety, O.B.E., Fellow; "The Metric System in its Relation to the Surveyors' Profession," by Lieut. A. J. Martin, Fellow; "The Effect of the War on the Present and Future Cost of Building," by Mr. E. H. Selby; "The Effect of Taxation on the Development of Mineral Estates," by Capt. (late Professor) David Bowen, B.E. Fellow; and "Valuations for Mortgage," by Mr. E. W. Rushworth, Member of Council.

Victoria and Albert Museum.

A state bedstead from Boughton House, Northamptonshire, recently presented to the Victoria and Albert Museum by the Duke of Buccleuch, has been placed on exhibition in the Woodwork Galleries of the Museum (Room 54). The bedstead with hangings and upholstery of crimson Italian brocade, enriched with gold fringes and ostrich plumes, is a typical example of the fine bedsteads which were made in England for Royal palaces and noblemen's houses in the latter part of the seventeenth century. Boughton House was rebuilt during that period by Ralph, Duke of Montagu, who was Ambassador to the Court of France at the time of Louis XIV. The decoration and furnishing of the house were completed by 1694, when William III and his Court visited Boughton, and it was for this occasion that the bedstead is said to have been made.

Dublin Reconstruction.

Mr. C. J. M'Carthy, Dublin City Architect, has prepared a report to be laid before the Reconstruction Committee, showing the progress that has been made towards the rebuilding of the destroyed area. In his report, Mr. M'Carthy states that since the passing of the Dublin Reconstruction Act plans have been deposited with him for the rebuilding of eighty-seven premises in the destroyed area. Of the total number of designs submitted seventy have now been finally approved. Of the rejected designs the majority have already been either amended or have been replaced by new designs prepared in accordance with the requirements of the case. Of the premises begun since the passing of the Reconstruction Act thirteen have been completed, and forty-four are at present in progress. The greatest progress has been made, not in the great thoroughfare of Sackville-street, as might have been expected, but in Henry-street, which has long been the important business centre of the north side of the city. In Earl-street, Upper and Lower Abbey-street, and Eden quay considerable progress has also been made. In Henry-street two buildings have been completed, and no fewer than fifteen are in course of construction.

INCORPORATED INSTITUTE OF BRITISH DECORATORS.

PRESENTATION TO RETIRING PRESIDENT.

On Friday evening last, at Painters' Hall, Little Trinity-lane, Mr. J. D. Crace, F.S.A., was presented with an illuminated address on the occasion of his retirement from the Presidentship of the Incorporated Institute of British Decorators. Mr. Mawer Cowton Cowton, the new President, was in the chair.

In making the presentation the President said they had met to do honour to Mr. Crace on his retiring from the Presidentship of the Institute, by reason of the great affliction which had befallen him. By the formation of that Institute and by his work as President, Mr. Crace had done much for his profession at a time when the commercial side prevailed far more than the art side. During the many years that Mr. Crace had been their President they had all been able to learn something from his brilliant summing-up of whatever subject had been introduced at the meetings, and his words had always been an education and an inspiration. During his connection with the Institute Mr. Crace had kept it entirely free from trade matters, feeling that those things were for the trade associations, and he (the speaker) intended to follow in that respect. During these strenuous times they had had the misfortune to lose their late Secretary, Mr. F. Englefield, who, in conjunction with Mr. Crace, had done so much for the Institute, but they were very fortunate in having his son, Mr. W. A. D. Englefield as his successor. The address which they were giving to Mr. Crace had been subscribed to by members and they asked him to accept it as a small token of the honour and esteem in which they held him.

Mr. L. A. Shuffrey, the Treasurer, then read the address as follows:—"We, Fellows and Associates of the Incorporated Institute of British Decorators who have hereto subscribed our names, desire, on your resignation of the Presidency of our Society through failing health, to express our grateful appreciation of the valuable services you have rendered to it during your term of office. Elected to that position in the year 1897 you were instrumental, in collaboration with our late Secretary, F. W. Englefield, in procuring the incorporation of the Society in 1899 and drawing up its Articles of Association. You designed the seal which is seen at the head of this address and the certificate of membership for Fellows, the original drawing for which we are pleased to know is now in the Albert and Victoria Museum; also the gold medal of the Institute, of which you were the recipient in 1908. We are mindful of your assistance in establishing a corporate fund and competitive travelling scholarship to enable the successful students to visit Italy, and there study the finest examples of decorative art. We feel honoured by your publication as our President of 'The Art of Coloured Decoration,' in which the broad principles of the art are so clearly enunciated. We recognise the lofty ideals which you have kept in view for the furtherance of colour decoration as an art, and it will be our endeavour to uphold the standard which you have set us."

Mr. Crace, in acknowledging the address, said he felt deeply touched at the kind thoughts which had prompted such a presentation. The address was not only a beautiful thing in itself, and he should always value it for that reason, but above all he should value it because it contained the signatures of so many kind old friends. He was very glad to hear the President's references to their late Secretary, F. W. Englefield. Many of them knew that Mr. Englefield rendered great services to the Institute, but none knew the extent of those services as well as he (Mr. Crace). To him was really due the drawing up of the articles which incorporated the Institute. As for himself, he had devoted a good deal of time to the Institute and its affairs, and he hoped it would never depart from the principles on which it was started, viz., the improvement of decoration as an art. He should look back upon that evening with many happy memories, and he thanked the many friends who had honoured the occasion with their presence and also those who had written.

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ILLUSTRATIONS.

New Business Premises, Regent Street, London.

WE give two illustrations of the proposed rebuilding of business premises, Regent-street, London. The elevations will be executed in Portland stone and the shop fronts in bronze. The work is to be carried out after the war. The architect is Mr. Henry Tanner, F.R.I.B.A.

Nurses' Home, Westhulme Hospital, Oldham.

The scheme illustrated secured first premium in a recent competition instituted by the Corporation of Oldham, and the architects, Messrs. C. T. Taylor & Roberts, 10, Clegg-street, Oldham, have received instructions to prepare the necessary drawings for the approval of the L.G.B. The accommodation provided is in accordance with the instructions issued to competing architects, viz.:—Provision for 20 bedrooms and one common sitting-room, two bathrooms with lavatory accommodation, water closets, box room and cellar for heating and domestic hot-water apparatus, coal and coke storage, and provision for further extensions. The building as planned will allow of extension in each direction without interfering with the original scheme. It will be observed that one half of the bedrooms on each floor are detached from the remainder, so that the night nurses can rest undisturbed during the day, being cut off from the remainder of the premises. The building is cross ventilated from back to front and from end to end, and in addition an ornamental glazed vent dome is provided over the octagon hall. The building is to be heated by hot-water low-pressure system and lighted by electricity.

CORRESPONDENCE.

Estimating under War Conditions.

SIR,—In normal times contractors could do so with some confidence, and reckon what profit might accrue on accepted tenders. Now all is changed, and while labour can be accurately gauged, it is not so with materials. That's the crux! No two consecutive quotations for the same product within one month are similar. The tendency in prices seems ever upwards. Timber is double what it was prior to the war, and other materials are tripled.

Under existing conditions, which will continue for some years after peace is declared, it is hardly possible to estimate with any degree of accuracy.

A new order of things, therefore, seems essential. The most equable form of executing work would be on a prime cost basis, that is, clients should pay a certain percentage on the prime cost of the work, plus a reasonable addition to cover all indirect expenses. This method is not quite new, as many large contracts have been, and are now being, executed on these lines. Banking and insurance companies adopt this arrangement with contractors, and it proves satisfactory to both parties.

It would necessarily follow that the same conditions should apply to all contractors, which would necessitate every firm and individual joining the Employers' Associations. Membership would constitute a bond of union binding all to the same conditions. And some effort should be made to influence all business men to join. Compulsion no Britisher likes; but when it is for the well-being of all, and would do away with competition *pro tem.*, it should be considered an obligation on the part of every trader.

Paper-hangings, plate glass, tobacco and other products are successfully controlled by the manufacturers, and there is no good reason why builders and decorators should not emulate the example.

Contractors would have to keep a proper record of all outgoings on works, as clients would have the right—though many might not avail themselves of it—to examine the books. This is done in all properly-conducted offices, and as the probability of loss is eliminated, there would be no anxiety as the works proceeded.

As Labour intends to assert itself in no uncertain manner by putting forward at least 300 candidates for industrial constituencies at the next General Election in England, Scotland and Wales, it behoves Capital to move in a like manner. Labour wants the "thick end of the stick," so as to dictate its terms.

These Labour candidates, if elected, will form nearly half the Commons and hold the "whip hand."

Their contention may be that, while wages are better than before the war, they have not increased in the same ratio as food, which is over 100 per cent. higher, and their pay is only 20 to 25 per cent. more. These are facts that Capital cannot very well "wink at."

JOHN M. FIFE.

Kensington, W.

The Finance Act and Builders.

SIR,—In the issue of the *Builder* for Oct. 12, there is a statement that the President of the National Federation of House-builders said the "great shortage of houses throughout the country . . . was due chiefly to the legislation of 1909-10, which rendered impossible the building of houses on an economic basis." Now, while I have frequently seen statements of this kind, I have not yet read a clear explanation, with facts and figures, how the Finance Act affects the builder's interest. I think you would be performing a service if you gave a clear account of the matter, taking nothing for granted. For example, a builder frequently relies on the creation of ground rents out of building sites for his profits—getting the houses perhaps at cost price. Now, if a builder buys some building land at say £500, capital value, and turns it into ground values, which he sells at £1,000, has the difference between the two values to bear the increment tax of 20 per cent.? If so, it would appear the Finance Act retards private enterprise in building to that extent. Be it observed, this is not a case of unearned increment; the builder has created the increase in value by his enterprise in building the houses. But the ground having been opened up and houses built, an adjacent piece of ground belonging to another owner of similar size and nature may become of greater value in the market, not on account of anything having been done by the owner, but on account of adjacent improvements. This is a real case of unearned increment and to be taxed as such. Even if this instance should militate against the builder it is different from the first case, which appears to be the crucial one, and which, if drawn within the province of the Act, should be freed from its operations. I hope you will thrash the matter out in a near issue for the benefit of builders, municipal bodies and Government reformers.

HOWARD H. HELY.

Clay Lumps.

SIR,—I see by your Notes, p. 198 of Oct. 5, that Mr. Bennett would like to know of other examples.

Perhaps it may interest him to know that in a supplement to the *County Gentleman*, Feb. 4, 1905, entitled: "In Search of a £150 cottage" there appeared an article by "Home Counties" describing and giving plans and specification, by Mr. Jas. S. Cooper of 14, Serjeant's Inn, Fleet-street, of clay lump cottages for Sir Walter Gilbey's Elsenham estate, Bishop's Stortford, the clay lumps being made on the estate.

C. F. B. SHILLITO.

Brocklesby Park, Lincs.

Those Building By-laws.

SIR,—With reference to Mr. Baillie Scott's letter in your last issue under this head, as a builder's estimator of many years' standing, it appears to me that builders must not let Mr. Scott's statement go unchallenged that the jerry-builder "knowing that glass is much cheaper than walling," is apt to put too much window space.

Unless refuted, this statement is likely to react on builders in the adjustment of accounts, as the contrary is the case. In pre-war times the extra cost of windows over walling in a brick structure was on an average 100 per cent., and in these times it would be more like 300 per cent.

A. H. M.

THE TIMBER TRADE.

More than 500 representatives of the timber trade from all parts of the United Kingdom attended last week a meeting at the Cannon-street Hotel, arranged by the Timber Trade Federation, to consider the situation which has arisen out of the present Government control, and to adopt the resolutions recommended by a special committee of the Federation for submission to the various allied associations. The President of the Federation, Mr. Louis Bamberger, who presided, proposed a resolution assuring the Government of the trade's desire to co-operate in measures for bringing the war to a successful conclusion. They only asked, he said, that they should be allowed to carry on their legitimate business with the minimum of interference from the Government, consistent with the national necessities created by the war. Their business was seriously prejudiced by the action of the Government.

The resolution was unanimously carried.

The next resolution, proposed by Sir John Fleming, was to the effect that the timber trade viewed with alarm the "imminent practical extinction of the import trade owing to the action of the Government in placing restrictions in the way of importers," and asked that "unrestricted importation should be permitted and Government control of stocks should be limited, both in the interests of the country and for the purposes of the war." He said that unrestricted importation of wood would assure supplies for the coming year.

Mr. Alexander Farquharson (London) seconded.

Mr. R. J. Williams (President of the Liverpool Timber Trades Association) proposed an amendment suggesting that consideration of the resolution should be deferred until a later date.

This amendment and another, proposed by Mr. A. W. Argran, president of the National Federation of Sawmill Proprietors, and seconded by Mr. G. E. Toogood (Hull), to the effect that only wood in its rough state should be imported, were defeated, and the original resolution carried.

Mr. Arthur May (Bristol) moved a resolution protesting against Government control of timber after the war. He declared that after peace had been secured no English trader would stand any Government interference with trade.

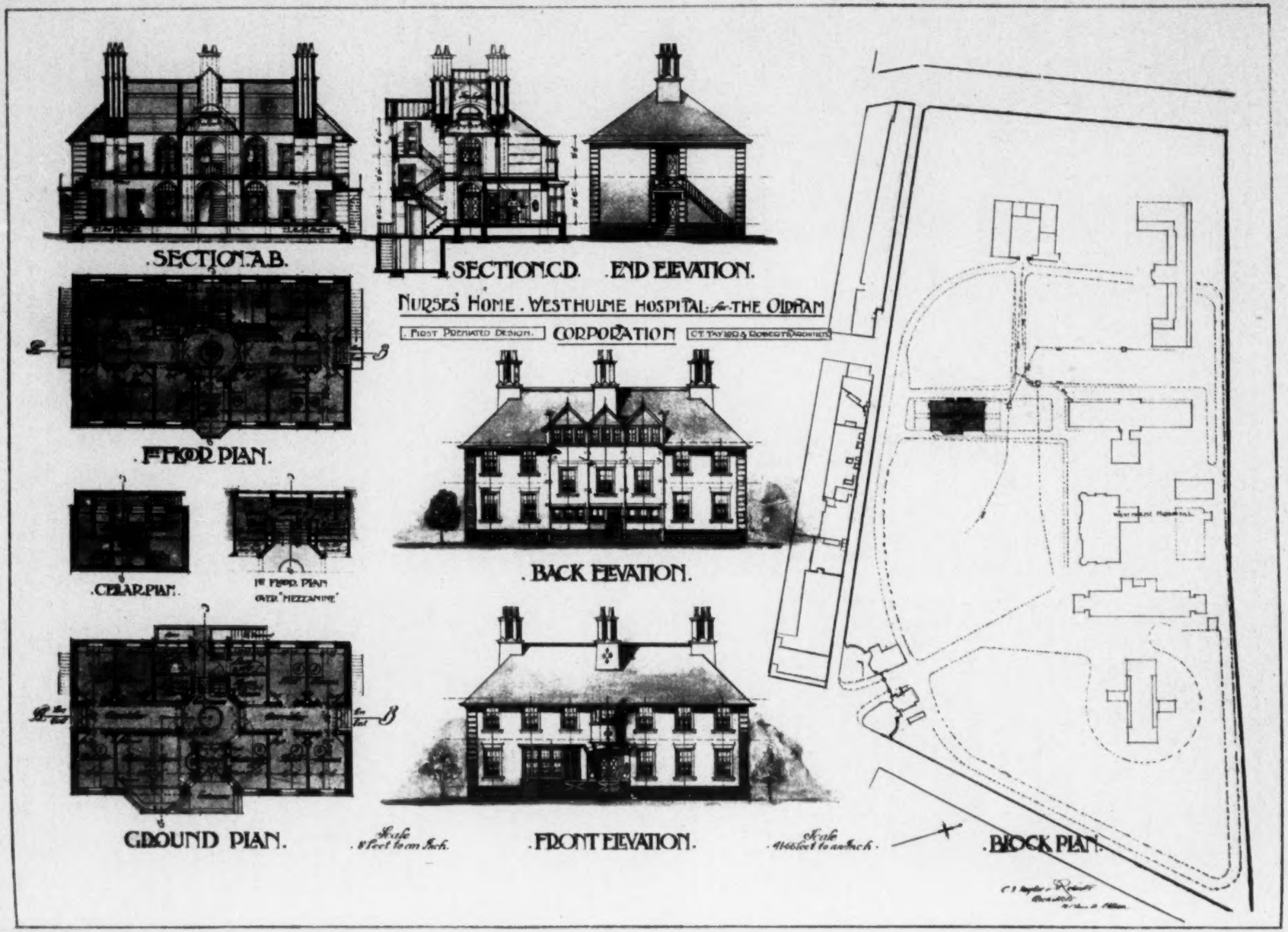
Mr. T. W. Allen (Hull) seconded.

Mr. Remer (Liverpool) proposed an amendment to insert the words "British and foreign." This was seconded by Mr. Bailey (Exeter) and adopted, and the resolution, as amended, was unanimously carried.

MEETING.

THURSDAY, *November* 1.

London University College (Chadwick Public Lecture).—Major Arthur J. Martin on "Sanitary Work in the Army." 5.30 p.m.



NURSES' HOME, WESTHULME HOSPITAL, OLDHAM.—First Premiated Design, by Messrs. C. T. Taylor & Roberts.

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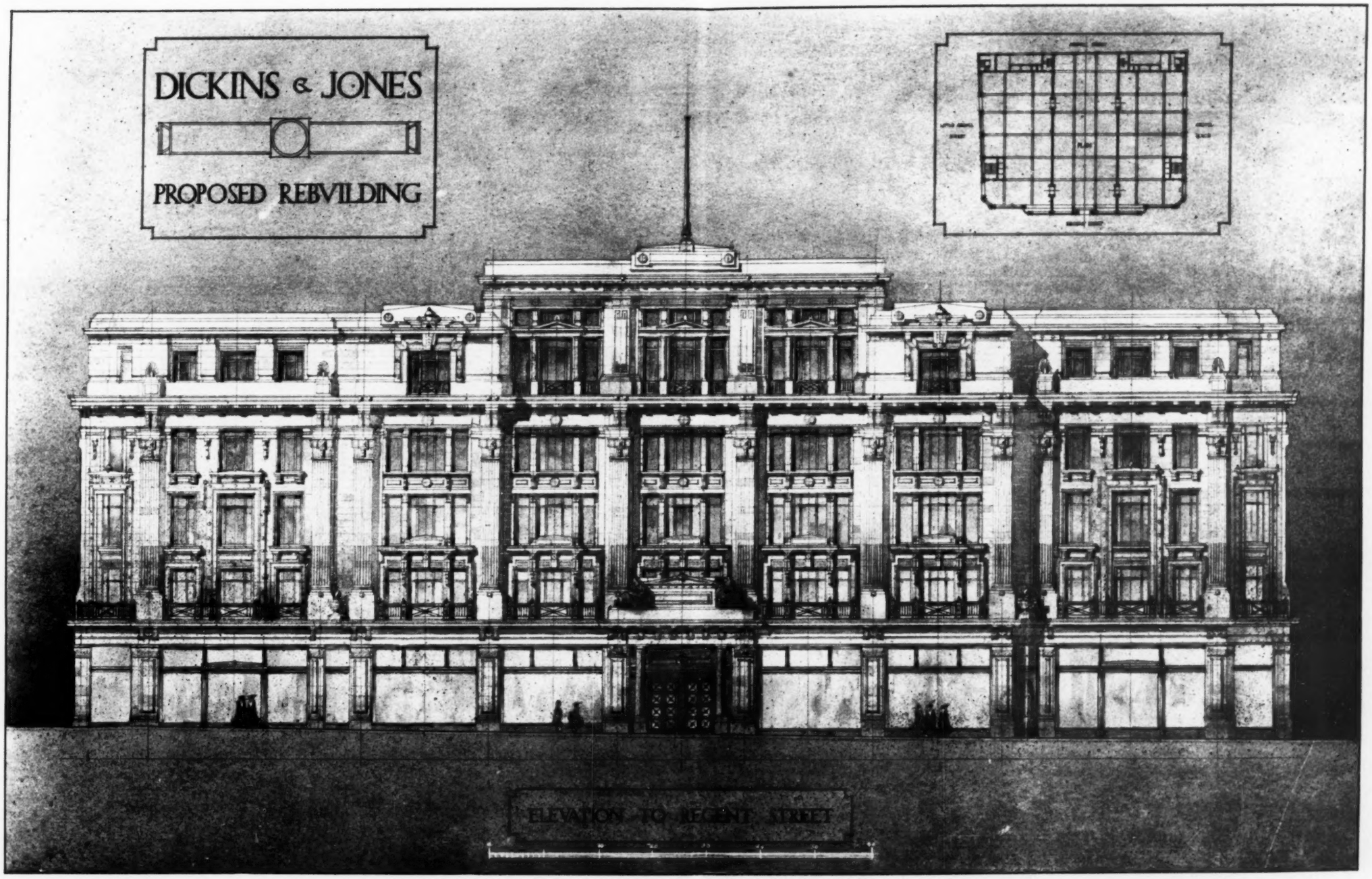


MR. HENRY TANNER, F.R.I.B.A., ARCHITECT.

NEW BUSINESS PREMISES, REGENT STREET, LONDON: ELEVATION TO ARGYLL STREET.

MR. HENRY TANNER, F.R.I.B.A., ARCHITECT.

EET, LONDON: ELEVATION TO ARGYLL STREET.
IR, F.R.I.B.A., ARCHITECT.

LEGAL SECTION.

NOTES ON CURRENT CASES.

Notices to make up Roads.

AN important point was decided in the recent case, Bristol Corporation *v.* Sinnott (*Weekly Notes*, July 21). The defendants were owners of land abutting upon a road which was not a highway repairable by the inhabitants at large. On March 10, 1914, the plaintiffs served a notice on the defendants, requiring them to make up the road. This notice was given under Section 150 of the Public Health Act, 1875, which provides that the notice shall specify a time within which the work must be done. In this case, the notice called upon the defendants to make up the road "within one calendar month from the date of the service." The defendants did not comply with the notice, and on June 8 the plaintiffs commenced to do the work themselves and completed it in four months and the expenses thus incurred were apportioned in the usual mannner. The defendants did not dispute the apportionment, but under section 268 appealed to the Local Government Board, taking the objection that the notice was bad in that it did not specify a reasonable time for the completion of the works. The Board held an inquiry, which was attended by counsel on behalf of the defendants, and on the Board intimating that they were prepared to make an order affirming the apportionment the defendants withdrew the appeal with the approval of the Board.

The present proceedings were a summons issued by the plaintiffs to obtain a declaration of charge, the defendants not having paid the sum declared in the apportionment. On this summons, the defendants relied on the same point raised before the Board—that the notice was bad, no reasonable time for the completion of the works having been specified in it.

The Court held that the notice was bad, and that the defendants were not estopped by anything they had done, from raising the objection.

As regards the first point, the Court held that the Act required a reasonable time to be fixed for the completion of the work and the local authority must exercise its discretion and fix a reasonable time. If they did exercise such a discretion, acting *bona fide*, then the owner could not contend that the time was too short and that the discretion was improperly exercised. But in this case the evidence was that the local authority, as a matter of common form, inserted a calendar month as the time in the notice, the Town Clerk explaining that the practice was rather to consider this time as a period during which the owners could decide whether they would do the work themselves or leave the local authority to do it, and the Court held that no discretion at all had been exercised.

As regards the second point, as to estoppel, the case is at present shortly reported, and the Judge's reasons for that part of his judgment are not given.

Liability in Relation to a Sewer.

A case of rather unusual character (Morris *v.* Mynyddislwyn Urban District Council) is reported in the Law Reports for August (1917 2 K. B. 309).

The defendant Council, acting under sections 23 and 36 of the Public Health Act, 1875, had served notices upon the owners of a row of twenty-seven houses requiring them to provide water-closets and to connect them with a sewer. Two of the houses were owned by one Richards, and an arrangement was come to between Richards and the other owners that he should do the work on behalf of all the owners by laying a pipe through the gardens at the back of the houses to take the drainage of each of the houses, and connect this pipe with the main sewer. When this work was carried out the pipe was laid underground most of the distance, but in one of the gardens it came above ground to the extent of half its diameter, *i.e.*, about 3 inches. This house and garden was owned by Richards, but occupied by the plaintiff, who lived there with her husband, and the plaintiff had one day slipped on the exposed portion of the pipe and sustained personal injuries for which she was suing the defendant Council.

Richards' agent, a member of the Council, had consulted the Inspector of Nuisances, who had signed the notices as to what work would be required, and in his evidence the Inspector of Nuisances had stated he acted for the Council and had passed the pipe. The plaintiff based her claim on two grounds: First, she said that the defendants were responsible because the work was done by their authority and under their direction; and, secondly, that since this pipe as constructed was a sewer, as soon as it was constructed it vested in the Council and they were compelled to keep it so that it should not be a nuisance. The jury had answered all questions in the plaintiff's favour, but the Judge had entered judgment for the defendants, and the plaintiff had appealed.

The Court of Appeal held that the sewer was constructed by Richards and not by the Council, as there was no evidence that they had acted under section 23 of the Public Health Act, 1875, in making any requisition as to the materials to be used or the level at which the drain was to be constructed, and there was no report of their surveyor on these questions, and the approval of the Inspector of Nuisances did not make the work executed on their account. On this latter point Lord Justice Scrutton held that this official had no right in law to give such directions.

On the second point the Court of Appeal held that, as was shown by the case Roderick *v.* Aston Local Board (5 CH. D. 328), even if the Council had constructed this sewer, they were entitled to construct it either wholly or in part above ground, and therefore there was nothing to constitute this sewer a nuisance under section 19 of the Public Health Act, nor were they under liability to the plaintiff.

The decision as shown above disposed of the case on broad grounds and rendered it unnecessary to consider some of the points raised in argument; for instance, as to whether section 18 of the Public Health Act, 1875, applies to any kind of nuisance except a sanitary nuisance, and the curious results which may ensue, where, as in this case, under section 23 certain persons are required to make connections with a sewer, but the work is privately executed in such a manner as to create a new sewer. It is, however, to be noted that two considerations did enter into the decision as delivered, *i.e.*, firstly, there was nothing in the nature of a concealed danger or trap about the sewer as vested in the Council; and secondly it had been constructed in private ground and the plaintiff sustained the injury in her garden and not on a highway.

Workmen's Compensation. Street Accidents.

In our issue for June 22 last, we very briefly referred to the decision in the House of Lords in the case Dennis *v.* A. J. White & Company, but reserved our full observations until the case was fully reported. It is now reported 1917 A. C. 479.

It will be remembered that the facts of this case were that a boy, employed by a firm of builders in the capacity of a plumber's mate, was, in the course of his employment, sent on errands, using a bicycle provided by the firm. On August 25, 1915, he was ordered to ride and fetch some plaster from a place in London, about a mile from the firm's premises, and when crossing Sloane-square he came into collision with a motor-car and broke his leg. The boy was usually sent on errands about once a day. The arbitrator had held that the accident did not arise "out of" the employment, and the Court of Appeal had upheld this finding.

In our issues for May 5 and August 25, we dealt with this case and other cases of street accidents, and we showed that the principle adopted by the Court of Appeal was this, that if an employee met with an accident in the streets, such as might befall any member of the public, the accident would not be deemed to have arisen "out of" the employment unless it could be shown that the employment in itself especially subjected the employee to such risks. It, therefore, came to be a question as to the frequency with which such risks had to be run, and in Dennis's case and in Read *v.* Baker (1916 1 K. B. 927) and Ince *v.* Reigate Committee (1916 2 K. B. 666) it was held that the employment was such as to involve no special exposure to street accidents and the applicants failed to obtain compensation. The Scotch Courts have never accepted this interpretation of the Act, and in our former articles we pointed out that their view was the most logical, as this question of frequency imported a new term into the Act, and we expressed a hope that the matter might come before the House of Lords for consideration.

It is, therefore, satisfactory to find that in the case we are considering the House of Lords has overruled all the above cases and adopted the view of the Scotch Courts. The Lord Chancellor laid down the law as follows: "If a servant in the course of his master's business has to pass along the public street, whether it be on foot or on a bicycle or in an omnibus or car, and he sustains an accident by reason of the risks incidental to the streets, the accident arises 'out of,' as well as in the course of, his employment. The fact that the risk may be common to all mankind does not disentitle a workman to compensation if it arises out of the employment." Another recent decision in the House of Lords in the case Thom *v.* Sinclair (1917 A. C. 127), as we showed in our article June 22, 1917, has done much to simplify the interpretation of the Workmen's Compensation Act which had become overlaid by conflicting decisions, and, as Lord Shaw of Dunfermline observed, had that decision been given before the Court of Appeal decided Dennis's case, their judgment probably would have been in the applicant's favour.

The law as laid down in these two cases in the House of Lords appears to be as follows: If a workman whilst performing the obligations of his employment under the conditions of his employment incurs a risk which that employment involves, and sustains injury from that risk, the accident arises out of his employment, and that whether the risk be common to all mankind or not.

It will be seen that the risk must be one involved by the employment, but that does not mean necessarily a risk which could be foreseen. In Thom *v.* Sinclair, the fall of the wall in the neighbourhood of the shed where the woman was employed was not a risk which was foreseen; but the House of Lords held that it was enough to bring the applicant within the Act that by the terms of her employment she had to work in the shed and was injured by an accident which happened to the roof of the shed, the proximate cause being that to be regarded under the Act.

There remains one question which may cause a little difficulty and which, although it was referred to in some of the judgments delivered in the House of Lords in Dennis' case, was not the subject of the actual decision. We refer to what were called general risks, *i.e.*, such as are common to anyone—a lightning stroke or injury from a bomb.

The Lord Chancellor laid it down that in such cases the employment must be shown to have exposed the employee to special exposure to such risks; for instance, in the case of lightning, that the man had to work in an exposed position, or in the case of injury from enemy aircraft that he had to work in a brilliantly lighted factory.

It is a little difficult after the wider interpretation which has been given to the Act by the House of Lords to draw the line between such general risks and others, for a stroke from lightning seems a no more unlooked-for occurence than the sudden fall of a neighbouring wall on someone's premises who was not the employer.

Probably what was present to the minds of the House was the case of, say, one employee being struck by lightning whilst working in an ordinary factory with other employees. Here the danger from lightning would not be an incident of the employment but a pure Act of God; but if an employee be sent into the street, being struck by lightning would appear almost as much an incident of the employment as being run over; and the case would be even stronger if an employee were ordered to go into the street whilst a thunderstorm was raging, or after a warning of the presence of enemy aircraft had been given.

These points may yet arise for decision by the House of Lords, but such accidents are not very common and the two decisions we have referred to have done much to explain the Act in ordinary cases, and by sweeping away many conflicting decisions they have rendered the Act more comprehensible to the "man in the street" as well as to the employee in the streets, and they will be welcomed by employer and employee as well as by insurer and assured.

One other observation may be made in connection with Dennis's case. The Court of Appeal considered the finding of the arbitrator to be one of fact, which the Court could not set aside, but the House of Lords held that the question whether upon the facts the accident arose "out of" the employment was one of law, which an appellate tribunal could consider.

A considerable number of conflicting decisions has resulted, as we have frequently pointed out before, from appellate tribunals refusing to disturb the findings in the courts below on the ground that they were findings of fact, and hence one arbitrator has followed one decision whilst another has adopted another. The decision of an appellate court obviates much litigation, as it is binding upon all courts of inferior jurisdiction, and the opinion of the House of Lords that the application of the facts to such a point as the above is a question of law is therefore of the utmost importance.

THE ENGINEERING PLANT IN LARGE HOTELS.

Mr. A. H. Barker, B.A., B.Sc., recently delivered a public introductory lecture at the University of London, under the auspices of the sub-department of heating and ventilating engineering, entitled "The Engineering Plant in Large Hotels." The lecture was illustrated with a number of lantern pictures.

Having remarked that the organisation of a large modern hotel was an affair of considerable complication, Mr. Barker said that such a building was not constructed until a very great amount of thought had been expended upon it. Its construction was so complicated that it would be inviting disaster to commence operations until the whole of the details had been exhaustively thought out. Indeed, the engineer perhaps got a better chance with hotel buildings, difficult as they were, than with almost any other sort of building, because he was of necessity consulted from the very first. The drawings of some large hotels in which the author had been interested had been practically complete, every motor, fan and other piece of machinery, every pipe and flue had been on the plans, and the whole of the calculations had been completed even before the buildings which were to be destroyed in order to make room for the future hotel had been demolished. Proceeding to describe the boiler house and heater room, in which the principal portion of the plant was centred, Mr. Barker said that it was there that all the heat required for every service except the direct fire cooking was generated. In this country it was a common practice to generate this steam in large, high-pressure boilers, with all the boiler house paraphernalia. The object of the design was, of course, to save as much fuel as possible, and at the same time to avoid smoke, which was likely, in a crowded district, to bring the authorities into trouble with the sanitary inspectors. At the same time, it was undesirable where it could be avoided to use the expensive Welsh smokeless fuel. It was important to avoid noise and to secure every access for fuel and facilities for the removal of ashes, and above all to keep the whole of the apparatus free from any kind of breakdown. Smokelessness could only be secured by very great care and often at the expense of extravagance in fuel. Means had been developed in late years for washing the smoke out of the flue gases by sprays of water; such devices, though they were successful in their object if well designed, involved a great deal of trouble and expense in working. The heater room contained all the pumps required for boiler feeding, for circulating the heating water, and the hot water supply, for pumping cold water to the top of the building in cases where the pressure in the street mains was not sufficiently great to command so high a building, to accommodate the central apparatus for pneumatic despatch tubes, and for vacuum cleaning and other machines. All the power was usually derived from electricity. About a thousand horse-power was required to drive the principal machines in a large hotel. The problem of heating was an exceptionally difficult one, the difficulty consisting rather in the methods of control than in the heating itself. There were periods when the larger rooms in an hotel might be unoccupied for the greater part of the day, then they might be suddenly required to be used for such purposes as company meetings, or some social or other purpose when they might suddenly be crammed with people. To keep the full heating and ventilating requirements at work throughout the whole day in such a room in order to respond to a call of that kind would obviously involve a large waste of fuel. The cost of the fuel in an hotel was a very serious item, amounting in some cases to tens of thousands of pounds per year.

It was easy, therefore, to see the power of control was one of the most important features in the design. It was necessary that it should be perfectly easy not only to know what the requirements at any given time were, but to adjust them according to requirements with very little trouble. As a building of that size occupied a very large amount of space, it would be readily understood that in order merely to walk to a distant point to read a thermometer or shut off a valve would be a serious waste of time for the engineer in charge. It was, therefore, in the first place desirable to provide that all such operations could be carried out from one point in the hotel. In the buildings for which he (Mr. Barker) had been responsible, that had been arranged to be done from one centre which he had termed the "control room," in which were concentrated electrical and mechanical appliances for enabling the control to be exercised at distant points without the engineer in charge leaving the room. Having explained in detail how this control worked, the lecturer proceeded to deal with the question of ventilation. He said that the ventilation of various rooms was accomplished by a balanced system—that was, air was forced into the rooms by the plenum system from a common central point, and each important room had its own independent extraction fan which withdrew the vitiated air from the room and discharged it into the open air. One of the principal difficulties in providing for the ventilation of an hotel situated in a crowded district was to obtain a supply of reasonably clean air free from smells and, as far as possible, from dust. One of the principal considerations was to prevent the smells from the outside from getting in, and also to prevent the many smells generated within the building from being transmitted to other parts of the hotel where the guests were. This difficulty was overcome by introducing the air, at a point where it was likely to be as free from such smells as possible, into a large settling chamber, where the air moved at a very low velocity, and as much dust as possible in the air was allowed to settle. The air was then passed through an air washer, providing means for producing a sort of heavy Scotch mist, consisting of a large number of nozzles, through which water at high pressure was forced by a centrifugal pump. By means of the atomizer the air was thoroughly wetted and all the dust particles which it carried with it were heavily loaded with water which caused them to sink into a large tank which formed the basis of the appliance. The water was filtered and used over and over again in the pump. In a very few hours it became as black as ink with the suspended matter removed from the air. Such an appliance was found to be a very economical investment in an hotel, because, if all the dust contained in the original air were blown into the buildings, the decorations would be ruined in a very short time; the saving in the renewing of decorations alone justified the adequate cleaning of the air before introduction. One effect of the washing of the air was also a considerable cooling effect, which was very desirable in the middle of summer. Having described in detail how the air thus purified was passed into the various rooms throughout the building, the lecturer referred to the hot water supply apparatus, which he said was as important a matter as any in the entire equipment of the engineering plant of a large hotel. It was certainly the most difficult and expensive part of the entire plant, especially in the case of a modern hotel, where lavatories and baths were provided to each room. The amount of hot water used in a large hotel was surprising and almost staggering; the greater proportion of it was probably wasted. It was impossible to determine the cause of such waste. It appeared that most persons who had free access to a lavatory or a bath without charge, where hot water was on tap at all times, would have a wash or a bath, not necessarily because they felt in need of one, but in order to get full value for the money they were spending, and persons who did not have to pay for the hot water were, one must assume from experience, surprisingly wasteful. The designing of the central apparatus was of very great importance, for it was necessary to ensure that in no instance whatever was it possible that the supply should be interrupted even for a minute. To do this the plant must be arranged in such a way that either no deposit was allowed in the pipes, or, if such deposit did take place, it could be easily removed without stopping the plant. To illustrate how this was done, the lecturer threw on the screen a number of photographs showing a design of his own, where the internal arrangements of the heaters were such that a man could get inside and have free access to each pipe and to the interior of the heater, the scale being removed from the bottom. The water was circulated in a large system by a centrifugal pump, which had to be arranged in a special manner to avoid the inconvenience of reduction of pressure by the suction of the pump, so that the operations of the pump increased the pressure to a considerable extent. Having passed in review the engineering plant required for the vacuum cleaning of the rooms, the transmission of orders throughout the building, and the provision of lifts, Mr. Barker said that one of the principal difficulties in arranging all the mass of machinery that was required in the case of a large modern hotel, was to provide against noise. To avoid that, the noisier machines had to be placed outside the buildings. It was necessary in all cases to bed the motors on sound-absorbing foundations, such as cork or felt or hair mattresses. Very curious devices had sometimes to be resorted to to suppress the noise. In some cases the motors had had to be bedded on large blocks of concrete, which were completely isolated from all foundations by heavy mats, without any kind of setting for the motors except the foundations. The foundations had sometimes to be completely surrounded by such mats, and in such a case the durability of the mats and their ability to resist the rotting influences of damp and other such influences had to be taken into account.

Books Received.

DRAWING FOR BUILDERS. By Burdette Dale, M.E. (London: Chapman & Hall. 7s. net.)

THE ANCIENT EARTHWORKS OF THE NEW FOREST. By Heywood Sumner, F.S.A. (London: The Chiswick Press. £1 net.)

THE BUILDING TRADE.

SCIENCE USEFUL FOR THE PLUMBER.

VII.—THE CORROSION OF METALS.

TROUBLES in connection with corrosion in pipes and boilers and questions relative to the preservation of outside work form an important subject for the plumber. To completely understand the principles involved in these matters a knowledge of both the mechanical properties of the metals and the chemistry of the action of water and its dissolved matters upon them is necessary, and we can only here give an outline of this large subject.

The great enemies of all materials are air and water acting together. Pure water, free from air, and dry air free from moisture have practically no corrosive effect on materials, but neither are ever found in this state in practice. Even the driest air contains a measurable amount of moisture, while all water contains air which has become dissolved in it from exposure to the atmosphere. This can be proved by the "sweating" of pipes conveying very cold water even on a dry summer day, this "sweating" being merely condensation of water from the air owing to its contact with the cold surface of the pipe. Again, if a tumbler of water be heated, long before any steam is generated bubbles will be found to collect on the glass or rise to the surface, which can be shown to be dissolved air taken up just as a solid dissolves, or as we say, "melts" in the water. A common example of the solution of a gaseous substance is that of carbonic acid gas in a mineral table water. In this case the gas is dissolved under pressure which increases the amount absorbed by the water and causes escape of bubbles when the pressure is relieved. This gas is much more soluble in water than air and also plays an important part in action on materials. In the case of solids more of a substance usually dissolves in hot than in cold water, but gaseous bodies invariably dissolve to a greater extent in cold than in hot water, and when water containing them is boiled they are entirely expelled with the steam bubbles. This is very important, for by such boiling and in a lesser degree by merely heating to a moderate temperature, the expulsion or partial expulsion of air or other gases from water may quite alter its properties.

Just as a sponge will not hold more than a certain amount of water, so there is a limit to the amount of any substance, whether gas or solid, which a given quantity of water can hold, but from what has been said above this must evidently be governed by the temperature. We may state this rule as follows:—A given quantity of water at a particular temperature can only dissolve a certain quantity of a gas or solid. When as much is dissolved as possible the water is said to be "saturated." Now, suppose that we dissolve some sugar in warm water until no more can be taken up and then cool this "saturated solution," since the colder water cannot contain as much, part of the sugar will re-appear in a solid form, and herein lies the explanation of the deposits from water found in boilers and hot-water pipes.

Rusting and Tarnishing.

Most metals rust or tarnish on exposure, which is caused chiefly by the action of moist air upon them. The active constituent of the air which causes these changes, and which is a fifth of the whole, is the gas oxygen, and the action it produces is called "oxidation." In this process the metal is attacked by the oxygen gas through the help of moisture and combines with it, forming a new substance which does not possess those properties—toughness, power of bending, strength and the like—which render the metal valuable for its particular purpose. Rusts or "oxides" are powdery or earthy in character, hence the necessity for preventing corrosion by their formation.

When an oxide formed on a metal keeps a good hold and is not itself liable to further change when formed, it acts as a protector to the metal below. As stated in a previous article, such oxides are formed on lead and copper on exposure.

Iron, on the other hand, rusts in an entirely different manner. This rust or "oxide" contains a considerable quantity of water, though it may be quite dry. The water is joined up to the oxide chemically, in the same sort of way that water is absorbed and becomes solid in plaster or cement on setting. This rust does not adhere to the metal, as in the case of lead and copper. Its form varies somewhat with the kind of iron in question; thus rust on cast iron is generally in nodules, which are more or less spongy but often adhere to the metal fairly well, but wrought iron rust is flaky, and since moisture readily finds its way behind the flakes, far from protecting the metal, rust aids further corrosion. The importance of such a study as the rusting of iron can hardly be over-estimated, and has received great attention from scientists in America, though by no means sufficient consideration in this country. It is, however, more vital to the work of the steel engineer than to that of the plumber, as far as atmospheric influences are concerned, but we must refer to it again in reference to different kinds of water conveyed in iron pipes.

Effects of Different Kinds of Water on Metals.

If water contained nothing but dissolved air the atmospheric effects on metals would be very similar to those produced by water in service pipes, but the extent and nature of the corrosion is know to be often very different, and knowledge of the kind of water to be dealt with in supplies is absolutely essential for the plumber who has to undertake work in different districts. Water is generally classed as "hard" or "soft." Though actually there is no sharp line between these classes, all degrees of hardness and softness being known, the distinction is sufficient for the elementary purposes of this article. The difference between the effects of hard and soft water is very striking, and a plumber accustomed to work in London would find occasion to vary his materials considerably for work in Birmingham or Manchester, which are supplied from lakes and therefore use water which is largely collected rain-fall.

Soft Water.

Soft water contains little but dissolved air and other impurities, such as soot, which are carried down in rainfall. When such water flows through lead pipes, or is stored in lead-lined cisterns, the dissolved air tarnishes or oxidises the lead; but instead of remaining as a protective film, as would be the case on a lead flat, this oxide dissolves in the water with which it is constantly in contact, and thus a fresh lead surface is exposed for further corrosion. It is true that this action is very slight, and that lead pipes may be used for years for conveying soft water without much apparent reduction in thickness; but, since the dissolved lead oxide is poisonous, the slightest solution of this kind is inadmissible for drinking water. Heat invariably assists chemical action, hence the conveyance of hot soft water in this manner is a much more serious matter. Another factor which aids corrosion is the presence of small quantities of ammonia, which may result from the presence of organic matter. Thus rain-water from ill-kept roof gutters containing decaying leaves and mud is much more likely to result in contamination by lead than when the water, though soft, is scrupulously clean. Lead poisoning is cumulative in its effects; that is, it does not give rise from the above causes to any sudden symptoms; and hence is all the more insidious, and may only be discovered after the evil has got thoroughly into the human system. If copper pipes are used for conveying soft water, these dangers are removed. A small initial tarnishing here takes place as before, but the film is not soluble; hence copper, which, like lead, is poisonous, does not find its way into the water supply.

(To be concluded in our next issue.)

THE HOUSING QUESTION.

The growing acuteness of the housing problem in munition areas in South Wales and Monmouthshire is shown by the fact that the Monmouthshire Public Health and Housing Committee, following a conference of local public authorities, prepared a report for submission to the Local Government Board in which they state that 12,000 houses are required, and ask the Government to provide facilities for the immediate erection of 5,000 houses. The Newport Corporation, who have had the circular letter of the Local Government Board under review, consider that a thousand houses are immediately required and an addition of 600 after the war. The Housing Committee suggest that the houses should be erected by private enterprise. There are 1,607 cases of overcrowding.

Ayr Town Council have adopted proposed replies to the Local Government Board submitted by the Public Health Committee. In these replies it was stated that the number of houses of four apartments or under was 5,248, of which none was vacant, 172 were overcrowded or sub-let, and fifty were defective. The number of new houses which, in the opinion of the local authority, were required to provide the necessary accommodation for persons of the working classes was 204. The Corporation, it was stated, had under consideration a scheme for the building of sixty houses on ground belonging to them at George's-avenue. In reply to the question—What measures are necessary, in the opinion of the local authority, to induce private enterprise to provide suitable houses for the working classes after the war?—the answers given were: Loans of money to private builders on easy terms; local authority to make roads and streets and spread the repayment over ten years, with interest; alteration of terms of Finance Act, 1910, taxing prices of houses when sold over their valued amount.

Arbroath Town Council have decided to reply to the queries of the Local Government Board regarding the provision of houses for the working classes after the war, to the effect that the number of additional houses required in the burgh was 300. No housing scheme had been prepared, but the local authority would be prepared to consider a scheme for 300 houses after the assistance to be given by the Government had been declared. It was not expected that any private enterprise would take place until a big reduction was made in the price of material and labour and the rate of interest on borrowed money. Co-operative societies, it was pointed out, might be induced to employ their members' savings in providing houses for their members. To induce private enterprise it was considered that the Government would require to provide capital at a low rate of interest with a long period for repayment of the capital.

Kirkintilloch Town Council have replied to the Local Government Board's memorandum on housing that the population of the burgh is 11,932; that there are 200 defective or uninhabitable houses; that the number of new houses required is 250, of which the Council have a scheme for supplying 128, conditional upon Government assistance. They are prepared to amplify the scheme by 122 extra houses.

Whitekirk Church Restoration.

The ancient building of St. Mary's, Whitekirk, which was burned in February, 1914, has been restored under the direction of Sir Robert Lorimer.

RATES OF WAGES IN THE BUILDING TRADE.

THE following are the present rates of wages in the Building Trade in the principal towns of England and Wales. It must be understood that, while every endeavour is made to ensure accuracy, we cannot be responsible for errors that *may* occur :—

	Masons.	Bricklayers.	Carpenters, Joiners.	Plasterers.	Slaters.	Plumbers.	Painters	Masons' Labourers.	Bricklayers' Labourers	Plasterers' Labourers.
	d.	d.	d.	d.	d.	d.	d.	d.	d.	d.
Aberdare	11	11	11	11	11	10½	10	8	8	8
Accrington	11½	11½	11	9½	9	10	9½	7	7	7
Altrincham	11	1/1	1/-	1/-	9	1/1	1/-	9	9	9
Ashton-under-Lyne	1/1	1/1	1/0½	1/-	1/-	1/-	1/-	8½	9	9½
Barnsley	10½	11½	10½	10½	9	1/-	9½	8½	8½	8½
Barrow-in-Furness	11½	1/-	1/0½	11½	11½	11½	11½	8½	9	9
Barry	1/-	1/-	1/-	1/-	—	1/-	11	9	9	9
Bath	9	9	9	8½	8½	9	8	6½	6½	6½
Bedford	11	11	11	11	11	11	9	9	9½	9½
Birkenhead	1/-	1/-	1/1	1/1	1/-	1/-	11	9	9	9
Birmingham	1/0½	1/0½	1/0½	1/0½	1/0½	1/0½	11½	9½	9½	9½
Bishop Auckland	9	9	10	9½	1/-	9	8	6½	6½	7½
Blackburn	11½	1/0½	1/-	11	11½	1/-	10½	8	8	8
Blackpool	1/-	11	11	9½	8½	9½	10½	6	6	8½
Bolton	1/1	1/1	1/-	11½	11½	1/-	1/0	7½	7½	9
Bournemouth	10½	10½	10½	10½	10½	10½	9½	7½	7½	7½
Bradford	1/0½	1/0½	1/-	1/-	1/0½	10†	10½†	10	10	10
Bridgwater	8½	8½	8½	8½	8½	8	7½	6	6	6
Brighton	9½	9½	9½	9½	—	9½	8	7	7	7
Bristol	11½	1/-	1/-	1/-	—	1/-	11	9	9	9
Burnley	11½	11½	11½	10½	9	10½	10½	7	7½	7½
Burton-on-Trent	11	11	11	11	11	1/-	10½	8½	8½	8½
Bury	1/-	1/-	1/0½	11	11	1/0½	11½	8	8½	8½
Cambridge	11	10½	10½	10½	10½	11	9	7½	7½	7½
Cardiff	1/-	1/-	1/-	1/-	1/-	1/-	11	9	9	9
Chatham	10	10	10	10	10	10	8½	7	7	7
Chelmsford	8	7½	8½	9	—	7½	6½	5	5	6½
Cheltenham	9½	9½	9½	9½	—	9½	9½	6½*	6½*	6½
Chester	10½	11	11	11	11	11	10	6½	7½	7½
Chesterfield	9	10½	10	8	9	8½	8½	5½	5½	5½
Colchester	8	8½	8½	9	8	9	6	5½	5½	5½
Coventry	1/0½	1/0½	1/0½	1/0½	1/0½	1/0½	11½	10	10	10½
Crewe	9	9½	9½	10½	10	9½	10	7	7	7½
Darlington	11½	11½	11½	11½	10	9½	9	8½	8½	8½
Derby	1/-	1/-	1/-	1/-	1/-	11½	10½	9	9	9½
Doncaster	9½	10½	10½	9½	9½	9	8	6½	6½	7½
Dudley	9½	11	11	10	10	9½	8½	8	8	8½
Durham	10½	10½	10½	10½	10½	9½	9	7½	7½	7½
East Glam. and Mon. Valleys	10	10	10	10	—	—	9	7	7	7
Exeter	9½	9½	9½	9½	9½	9	8½	8	8	8
Folkestone	8½	9	9	9½	8½	9	8	7	7	7
Gloucester	10½	11	11	10½	10½	11	10	8½	8½	8½
Grantham	◇	◇	7½	7½–8	7½–8	8½	6½	5	5	5
Grays	—	11	11	—	—	11	9½	9	9	9
Grimsby	9	10	10½	10½	10	10	10	8	8	8
Great Yarmouth	8	8	8	—	8	8	6½	5	5	—
Halifax	1/-	1/-	11½	9	9	11	10	9½	9½	9½
Harrogate	10½	9½	11	9	8	1/-	9½	7½	7½	7½
Hartlepools	1/0½	1/1	1/1	1/1	1/-	10½	9	10	10	10½
Hastings	10	10	10	10	10	10	8½	7	7	7
Hereford	10	10	10	10	10	10	9	7½	7½	7½
Huddersfield	1/-	11	11½	11½	11½	1/-	11	9½	9½	9½
Hull	11½	11½	11½	11½	11½	1/-	9	9½	9½	9½
Ipswich	10½	10½	10½	11	10½	11	9	8	8	8
Lancaster	10½	10½	11	10	9½	10	9	6	6½	7½
Leamington Spa	10½	10½	10½	10½	10½	10½	9½	7½	7½	7½
Leeds	1/1½	1/1½	1/1	11½	11½	1/-	10	10½	10½	10½
Leicester	11½	11½	11½	11½	11	10½	9	9	9	9½
Lincoln	10½	10½	10½	10½	10½	10½	10	8	8	8
Liverpool	1/1½	1/1½	1/1½	1/1	1/-	1/1	1/-	9½	9½	9½
Llanelly	1/-	1/-	1/-	1/-	1/-	1/3	11	9	9	9
London	1/1½	1/1½	1/1½	1/1½	—	1/2	11	10	10	10
Loughborough	10	10	10½	10	10	10	9	8½	8½	9½
Luton	9½	10½	10½	8½	9	8½	9½	8½	8½	8½
Maidstone	10	10	10	10	10	10	9	7	7	7
Manchester	1/1	1/1	1/1	1/0½	11	1/2	1/-	9	9	9
Mansfield	8½	11	10½	8½	—	10½	9	8	8	8
Merthyr Tydfil	11	11	11	11	11	11	10	8½	8½	8½
Middlesbrough	1/0½	1/1	1/1	1/1	1/-	10½	9	10	10	10½
Newcastle-on-Tyne	1/1½	1/1½	1/1½	1/1½	1/-	10½	11	10½	10½	10½
Newport, Mon.	11½	11½	11½	11½	11½	1/0½	10½	8½	8½	8½
Northampton	11	11	11	11	11	11	10	8½	8½	8½
Norwich	10½	10½	10½	10½	10½	10½	9½	8	8	8
Nottingham	1/1	1/1	1/1	1/1	1/0½	1/1½	11½	10½	10½	11
Oldham	1/-	1/-	1/1	11½	11	11½	1/-	8½	8½	9
Oxford	11	10½	10½	10½	10½	10½	9½	8	8	8
Plymouth	10*	10*	10*	10*	10*	10*	8½*	8½	8½	8½
Pontypridd	11	11	11	11	11	11	10	8	8	8
Portsmouth	11½	11½	11½	11½	11½	10½	9½	9	9	9
Preston	10½	1/-	11	11	11	1/-	11½	7½	8	8
Reading	9	9½	10½	10½	—	9½	8½	6½*	6½*	6½*
Rochdale	1/-	11½	1/0½	11½	10½	1/0½	1/-	8½	8½	9
Rochester	10	10	10	10	10	10	8½	7	7	7
Rugby	11	11	11	11½	1/-	11	10	8	8	9
St. Albans	10	10	10	10	10	10	9	8	8	8½
St. Helen's	1/-	1/-	1/-	1/-	1/-	11	10½	7	7½	8
Scarborough	9	9½	9	8½	8	9	8	7	7	7
Sheffield	1/0½	1/0½	1/1½	1/1	1/1	1/1	10	10½	10½	10½
Shrewsbury	8½	9½	9½	9½	—	8½	7	6½	6½	6½
Southampton	11½	11½	11½	11½	11½	11½	10½	8½	8½	8½
Southend-on-Sea	9	9	9	9	P'cework	9	7	6	6	6
Southport	11½	11	11½	11	11	11	11	7	7½	7½
South Shields	1/1½	1/1½	1/1½	1/1½	1/-	10½*	11	10½	10½	10½
Stockport	1/1	1/0½	1/0½	11½	10½	1/-	11½	8½	9	9
Stockton-on-Tees	1/0½	1/1	1/1	1/1	1/-	10½	9	10	10	10½
Stoke-on-Trent	11½	11½	11½	11½	—	10½	10½	8½	8½	8½
Stroud	9	9	9	9	9	9	8½	7	7	7
Sunderland	1/1	1/1½	1/1	1/1	1/-	9½	11	10	10	10
Swansea	1/-	1/-	1/-	1/-	1/-	1/2	11½	9	9	9
Taunton	9	9	9	9	9	9	8	6½	6½	6½
Torquay	10	10	10	10	10	10	10	8	8	8
Wakefield	10	11	10½	9½	8½	10½	10	9	9	9
Walsall	11½	11	11	11	11	11	9½	8½	8½	8½
Warrington	11	1/0½	1/-	1/0½	1/0½	1/-	11	7	7½	7½
West Bromwich	11	11	10½	10½	—	10•	9	8	8	8
Wigan	11½	1/-	11½	11	10½	11½	10½	9	9	9
Windsor	10	10	10	10	10	10	8½	7	7	7
Wolverhampton	1/-	1/-	1/-	11	11	1/-	10½	9	9	9
Worcester	9½	10	10	10	10†	10	8½	7½	7½	7½
York	9½	9½	9½	10½	10	10½	8½	8½	8½	8½

The Masons' rate given is for bankers; fixers usually ½d. per hour extra.
* War bonus of 2s. per week granted. †War bonus of 3s. per week granted. ‡War bonus of 2s. 6d. per week granted.
‖ War bonus of 6s. per week granted. § 1d. per hour extra for men engaged on munition work.

Competitions, Contracts, &c.

For some contracts still open, but not included in this List, see previous issues. Those with an asterisk (*) are advertised in this number. Contracts, —; Tenders, —; Public Appointments, xviii; Auction Sales, —, Certain conditions beyond those given in the following information are imposed in some cases, such as that advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bona-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

*****It must be understood that the following paragraphs are printed as news, and not as advertisements; and that while every endeavour is made to ensure accuracy, we cannot be responsible for errors that *may* occur.**

BUILDING AND PAINTING.

OCTOBER 29. — **Shoreham-by-Sea.** — PAINTING.— Steyning Guardians invite tenders for certain painting work at the Children's Homes, Shoreham-by-Sea. Form of Mr. Arthur Flowers, Clerk to the Guardians, Union Offices, Shoreham-by Sea.

OCTOBER 29.—**Southend-on-Sea.**—CLEANING AND PAINTING.—The Corporation invite tenders for the exterior cleaning and painting of the Central Police Station and the Westcliff Police Station. Specifications, &c., of Mr. Ernest J. Elford, M.Inst.C.E., Borough Engineer and Surveyor. Deposit, £1 1s.

OCTOBER 31.—**Penzance.**—RESLATING.—For reslating the roof of the south mortuary chapel and other repairs at the cemetery, Penzance. Specifications at the Borough Surveyor's office.

ENGINEERING, IRON AND STEEL.

NOVEMBER 19.—**Sheerness.**—BOILER, &C.—The Sheerness U.D.C. invites tenders for the supply and erection of a Lancashire boiler, boiler mountings, superheater and Green's economiser at the Sheerness East Pumping Station. Specification, &c., of Mr. Vincent H. Stallon, Clerk of the Council, Council Offices, Sheerness. Deposit £1 1s.

ROAD, SANITARY, AND WATER WORKS.

OCTOBER 29.—**Neath.**—DRAINAGE.—For the drainage of 45 houses at Pentre-street, Avon-street and Mill-terrace, Glynneath, for the Neath R.D.C. Plans, &c., from Mr. W. E. C. Thomas, A.M.Inst.C.E., Council Offices, Orchard-street, Neath.

NOVEMBER 5.—**Downham Market (Norfolk).**—GRIT CHAMBER, &C.—For the construction of a grit chamber, &c., at the existing pumping station, for the U.D.C. Plan may be seen at the Council Offices, Downham Market, and bill of quantities, &c., obtained from the engineers, Messrs. Elliott & Brown, Burton-buildings, Parliament-street, Nottingham.

Public Appointments.

✱**London.**—The Walthamstow U.D.C. require the services of a Stores Ledger Clerk. Apply to the Surveyor, Town Hall, Walthamstow, E. 17.

OBITUARY.

Mr. A. L. Hickman.

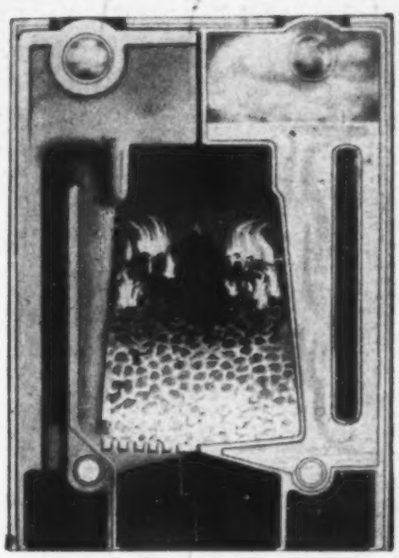
WE regret to state that the senior partner in the firm of Messrs. Geo. Munday & Sons, builders and contractors, Botolph-lane, Eastcheap, E.C. 3, Mr. A. L. Hickman, passed away on Saturday last, at his residence at Highgate, in his fiftieth year, after a short illness and operation.

Lieutenant T. B. Butler-Stoney.

Lieutenant Thomas B. Butler-Stoney, Irish Guards, of Portland Park, Co. Tipperary, who died at the Empire Hospital, Vincent-square, on September 30, of wounds received in action, was the eldest son of Charles Butler-Stoney, D.L. He was educated at Temple Grove, Wimbledon, School, and Eton (Everard's), and after leaving school studied art and exhibited several years at the Royal Academy, as well as doing a considerable amount of book illustrating. In 1912 he took up farming.

Save Fuel—Save Labour.

Ideal "F" and "G" Series Boilers are so designed as to provide a positive circulation within the boiler itself and permit the slow and complete combustion of the fuel, thus ensuring 10 to 20 per cent. higher efficiency than with most other types and effecting a corresponding saving of fuel.



Internal View of Ideal Sectional Boiler.

IDEAL RADIATORS & IDEAL BOILERS

Ideal "F" and "G" Series Boilers are simple and easy to erect, regulate and clean, thus reducing to a minimum the labour required for their fixing and operation. They possess many other advantages and are made in sizes for 230 to 9,300 square feet of hot water radiation, and for 780 to 5,200 square feet of steam radiation.

Further particulars on request. Inspection of our Showrooms is invited.

NATIONAL RADIATOR COMPANY LIMITED. Offices, Showrooms and Works: HULL, Yorkshire.
Telephone: Central 4220. Telegrams: "RADIATORS, HULL."

London Showrooms: 439 & 441, OXFORD STREET, W. { Telephone: MAYFAIR 2153. Telegrams: "LIABLENESS, LONDON."

Agents in Great Britain carrying Stocks of "Ideal" Radiators and "Ideal" Boilers { BAXENDALE & CO., Ltd., Miller Street Works, MANCHESTER. WILLIAM MACLEOD & CO., 60, 62, & 64, Robertson Street, GLASGOW.

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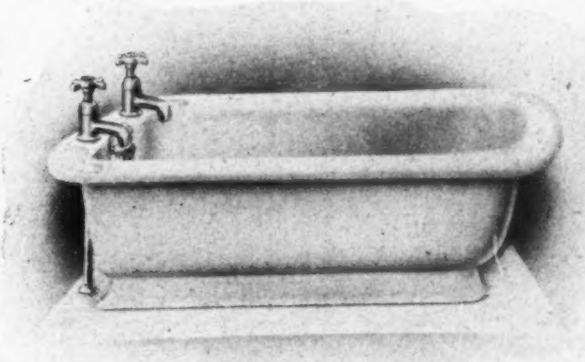

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MANUFACTURERS and MERCHANTS, EVERY REQUISITE FOR BUILDING CONSTRUCTION,

'Phone—STRATFORD 1 (4 lines). CALEDONIAN WORKS, STRATFORD, LONDON, E. 15. Telegrams—"YEMART, LONDON."

Some Reasons for Installing "DEVON" FIRES

"Devon" Fires interpret all that is best in stove construction, express the greatest advance in design, realise the nearest approach to perfection. They solve two important problems: smoke abatement—economy in fuel consumption.

"Devon" Fires are made by Candy & Co., Ltd., at their South Devon Works in three types and in a variety of modern designs. "Devon" Fires can be supplied to suit any kind of architecture and to harmonise with any scheme. Architects' own decorative schemes can be carried out.

At the showrooms are displayed many models in all types of fires and a range of tiles and briquettes in numerous tints in glazed and egg-shell finishes, suggesting the variety of schemes possible with "Devon" Fires. The book of "Devon" Fires gives designs and sections and is free on request.

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Works:
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NO DELAY.

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Easily Fixed.

GEORGE M. CALLENDER & CO., Ltd.
(*Dept. 7*), **25, Victoria St., London, S.W.**

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To secure efficiency with economy of both time and labour is the

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As regards the interior decoration of buildings, the problem is solved.

Substitute for lath and plaster with its attendant mess

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THE FIRE-RESISTING BUILDING BOARD.

(Tested by British Fire Prevention Committee and Institute of Hygiene.)

This needs no preparation. You take the sheets just as they arrive, nail straight on the studdings or joists, cover the joins with a suitable panelling strip, and the whole is ready at once to be painted or distempered. The results are surprisingly artistic. The panelled walls impart an air of elegance and comfort. But more, "CALNO" is fire-resisting, and a good non-conductor of cold, heat and sound, and it

NEVER CRACKS or SPLITS.

A compendium of advantages such as this will surely recommend "CALNO" at the present juncture.

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Write for samples "B" Department.

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Telephones:
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"Boards, Purfleet."

PROPOSED NEW BUILDINGS AND OTHER WORKS.*

In these lists care is taken to ensure the accuracy of the information given, but it may occasionally happen that, owing to building owners taking the responsibility of commencing work before plans are finally approved by the local authorities, "proposed" works, at the time of publication, have been actually commenced. Abbreviations:—T.C. for Town Council; U.D.C. for Urban District Council; R.D.C. for Rural District Council; E.C. for Education Committee; L.G.B. for Local Government Board; B.G. for Board of Guardians; L.C.C. for London County Council; B.C. for Borough Council; and P.C. for Parish Council.

AYLSHAM.—The Guardians and R.D.C. have informed the L.G.B. that about 50 new cottages will be required in the parishes of the Aylsham R.D.C.'s area.

BERWICK.—The T.C. propose the prep ration of a scheme for the erection of 300 workmen's houses after the war.

BO'NESS.—Bo'ness T.C. have informed the L.G.B. that they require to prepare a scheme for the erection of 500 houses, provided that satisfactory financial assistance is forthcoming from the Government, and provided also that satisfactory financial arrangements can be come to with colliery owners for the exercise of an option over as many of these houses as they may desire for their employees.

CARMARTHEN.—Carmarthen R.D.C. has informed the L.G.B. that 250 houses are needed in the district.

COWDENBEATH.—Cowdenbeath T.C. have, in reply to the Board of Trade on the question of housing, stated that 315 additional houses are required to meet the needs of the working classes. They are anxious to have all the houses erected as soon as satisfactory financial arrangements can be made.

DEPTFORD.—Plans passed by B.C.:—Alterations and additions to drainage, Welcome Coffee Tavern, Arklow road, for Mr. T. D. Leng.

DUNBAR.—Dunbar T.C. have agreed to inform the L.G.B. that, under the Housing and Town-Planning Scheme, 100 houses will be required in Dunbar, and that a scheme is in contemplation.

EAST COWES.—The U.D.C. has approved plans for an addition to an electric-light station.

FINDOCHTY.—Plan passed: Wash-house, &c., for Mr. James Phiminster, 8, Back-street.

GALASHIELS.—The T.C. has granted warrant to the Trustees of the late Mr. Robert Stirling to erect three washing-houses and drainage connections at their property in Church-street and Glebe-place.

GLASGOW.—The Health Committee is recommending that the Corporation make application to the Ministry of Munitions and the L.G.B. for authority to proceed with (1) the extension of Bellefield Sanatorium, so as to provide accommodation for 100 additional patients (present accommodation 52 beds); (2) to proceed with the extension of Knightswood Hospital, work on which has meantime been suspended, so as to accommodate 250 patients (present accommodation 88 beds); and (3) to proceed with the erection of a Sanatorium at Southfield, to accommodate 150 patients.

HALIFAX.—Plans passed by T.C.:—Mr. Enoch Hill, external conveniences, Willow Hall; Messrs. Eli Horsfall & Co., conversion of buildings into offices, Stannary Mills; Messrs. F. Pratt & Co., Ltd., conversion of buildings into canteen, 5, Winding-road; Kings Cross Cricket and Bowling Club, new lavatories, Hopwood-lane; Messrs. J. Stirk & Sons, Ltd., works extension, Crown Works; Messrs. J. Butler & Co., new roof, Mile Thorn Mill; United Brassfounders and Engineers, Ltd., metal store, Spring Hall-lane; Mr. Wilkinson Wallace, sanitary conveniences, Alfred-street; Mr. David Hanson, additional rooms, "Satterlee," Shibden.

HOLYWELL.—The Holywell R.D.C. have submitted for the approval of the L.G.B. housing schemes for Bagillt and Mostyn, which will cost about £13,000, and it is expected the work will be proceeded with immediately after the close of the war. The Holywell U.C. are also preparing a scheme for the erection of new houses in the town.

KINGSTON.—The Thames Conservancy has granted permission to the Kingston Corporation to reconstruct a portion of their riverside promenade, extending 287 feet beyond the present frontage.

KIVETON PARK.—The D.C. has approved plans for an addition to the King's Farm, Waleswood, for Lady Yarborough.

LAMBETH.—The B.C. propose to carry out road repairs as follows:—Stamford-street (between Waterloo-road and Cornwall-road), £1,250; New Cut (between Waterloo-road and Cornwall-road), £281; patching repairs to various other asphalt carriageways, £469.

LAMPETER.—The Lampeter R.D.C. has agreed to the erection of 44 houses after the war.

LOCHGELLY.—Lochgelly T.C. has decided that 200 houses should be built as soon as circumstances permit.

LOFTUS.—The Council has agreed that after the war the district would require 300 new houses to meet the demand.

OSSETT.—Plans approved: Conversion of Rose Villa, Queen-street, into two houses, for Mr. A. F. Lloyd; alteration and addition at Dimple Wells, for Mr. Ernest Hepworth; cattle sheds on land behind Heath House, for Alderman G. F. Wilson.

OXFORD.—The General Purposes Committee of the Oxford City Council has decided to recommend that 100 working-class dwellings be built under a municipal housing scheme.

POPLAR.—Plans of drainage passed by the B.C.:—At 69, Lamprell-street, for Mr. S. Barnett; at 618, Old Ford-road, for Mr. R. A. Reid; at premises of Messrs. Fletcher, Son & Fearnall, Bridge-road, for Messrs. Andrews & Peascod; at 707, High-street, for the Anglo-Mexican Petroleum Co., at 163, Bow-road, for Messrs. Andrews & Peascod.

PRESTON.—Plans passed by T.C.:—Dining room at premises of Messrs. T. Coulthard & Co., Cooper-road, for Mr. E. J. Andrew; pattern store, Bow-lane, for Messrs. Dilworth & Carr; additions 31, Castleton-road, Mr. W. Milner, for Mr. A. Forshaw; extension of foundry, Grimshaw-street, for Mr. T. Dryden; alterations, 118–120, Manchester-road and 34, Silver-street, for Mr. J. Hayes.

SEAHAM HARBOUR.—The Seaham Harbour U.D.C. has decided to inform the L.G.B. that, subject to the provision of approved financial assistance from public funds, the Council will undertake to build 200 houses at once and the remainder, up to 600, at a rate of 100 per year after the war, always provided that private enterprise is unable to meet the housing demand.

SHEFFIELD.—Sheffield Gas Company will shortly start on new works which are to be erected near Wadsley Bridge Station.

SOUTHEND-ON-SEA.—Plans passed:—Drainage, Burnaby-road, for Southend Gas Co.; alterations, London-road, for Mr. F. F. Ramuz.—The Highways Committee of the T.C. recommends the Council to urge the L.G.B. to sanction the borrowing of £3,060 for carrying out a portion of the eastern surface water drainage system.

STOKE NEWINGTON.—Plan passed by B.C.:—Reconstruction of drains, the Lodge, Abney Park Cemetery, for Messrs. W. H. T. Kelland & Sons.

TRANENT.—The T.C. has agreed to erect 100 houses.

TWEEDMOUTH.—Berwick T.C. has decided to offer to the sanitary authority land owned by them at Tweedmouth Farm, for the purpose of erecting houses for the working classes, in accordance with the Government scheme.

ULVERSTON.—The Lancashire E.C. has decided to carry out alterations at the Wesleyan School to provide additional accommodation for the Grammar School.

WARWICK.—Warwick T.C. has adopted a housing scheme under which 300 new houses are to be built in the town after the war.

WATFORD.—The R.D.C. has decided to inform the L.G.B. that the following cottages would be required after the war: Abbots Langley, 8; Aldenham, 12; Rickmansworth Rural, 12; Serratt, 6; and Watford Rural, 6.

WHITBY.—Plans of a proposed bungalow at Fyling Hall, for Mr. Allison, have been before the R.D.C.

THE GOVERNMENT HOUSING SCHEME.

Considerable progress, it is stated, has been made with the Government housing scheme, which was initiated by Lord Rhondda, and has since been followed up by Mr. Hayes Fisher. The President of the Local Government Board, having received the consent of the Cabinet to guarantee substantial financial assistance, appointed two committees—(1) Under Sir J. Tudor Walters, to consider the technical aspect of the question; and (2) under Mr. S. Walsh, M.P., to consider the control, at present exercised in England and Wales, over the erection of buildings and the construction of streets, and to make recommendations. The general question has also been considered by Mr. Hayes Fisher and the President of the Board of Agriculture, while the Ministry of Reconstruction is considering the question of supply and control of building materials and of labour, in relation to demobilization. The Department is also in close touch with the Royal Institute of British Architects in connection with model plans. The returns now being received from the local authorities are regarded as satisfactory. From these returns, which come from all classes of local authorities large and small and indicate willingness to build anything from 10 to 1,000 houses straight away, it appears that the authorities will be able to start at once on the building of 150,000 houses, about one-half of the number which it is estimated will be required.

A War Memorial Museum for Birmingham.

A proposal to form a War Memorial Museum in Birmingham was considered and warmly approved at a meeting in the Council House recently. The gathering was presided over by the Lord Mayor (Alderman A. D. Brooks), and the scheme was supported by the Earl of Plymouth (chairman of the Local War Museums Association).

NEW GOVERNMENT CONTRACTS.

War Office.

Barrows.—Acme Patent Ladder Co., London, S.W.

Baskets (Tool).—Hampton & Sons, Ltd., London, S.E.

Baths (Long).—Orme, Evans & Co., Ltd., Wolverhampton.

Bitumen Roofing.—Asbestos and Building Materials Co., London, E.C.

Blocks (Tackle).—Ansell, Jones & Co., Birmingham; J. Barnsley & Sons, Ltd., Netherton, Dudley; Davey & Co. (London), Ltd., Longridge, Lancs.; C. Willetts, jun., Ltd., Cradley Heath.

Boilers (Steam).—Cochran & Co. (Annan), Ltd., Annan, N.B.; Graham & Fleming, Halifax.

Bolts and Nuts, &c.—Nuts and Bolts (Darlaston), Ltd., Darlaston; J. C. Prestwich, Ltd., Atherton; T. Williams & Sons, Ltd., Halesowen.

Boxes and Chests (Wood).—J. E. Butt & Sons, Brighton; H. C. Cleaver, Ltd., London, N.W.; Frazers Joinery Co., Ltd., Norwich; Johnson, Taylor & Co., Ltd., London, E.C.

Cocks, Valves and Taps.—British Steam Specialities, Ltd., London, E.C.; Ham, Baker & Co., Ltd., Birmingham; Hunt & Mitten, Ltd., Birmingham.

Engines (Oil).—Tangyes, Ltd., Birmingham.

Felt (Roofing).—Ruberoid Co., Ltd., Brimsdown, Middlesex.

Footways (Bridge).—Braithwaite & Co., Ltd., West Bromwich; E. C. & J. Keay, Ltd., Birmingham.

Glass (Sheet).—Pilkington Bros., Ltd., St. Helens, Lancs.

Huts (Wood).—Whyte & Co., Ltd., London, E.C.

Lathes.—T. & R. Lees, Ltd., Oldham.

Locks, Hinges, &c.—T. Crompton, North Ashton; J. Parkes & Sons, Ltd., Willenhall.

Machines (Various).—W. G. Allen & Sons (Tipton), Ltd., Tipton; T. Chatwin, Birmingham; S. Lund & Sons, Keighley; D. & J. Tullis, Ltd., Glasgow.

Mallets.—F. H. Ayres, Ltd., London, E.C.; S. & F. Hodgetts & Co., Birmingham; W. Lambert, Nelson; J. Nicholls & Sons, Wolverhampton; J. Reynolds, Chesham; C. Webber, Exeter.

Mixers (Concrete).—Ransome ver Mehr Machinery Co., Ltd., Ipswich; Stothert & Pitt, Ltd., Bath.

Paint, Putty, &c.—L. Berger & Sons, Ltd., London, N.E.; J. J. Bowater, West Bromwich; Burrell & Co., Ltd., London, E.; Cookson & Co., Ltd., Newcastle-on-Tyne; Cowan Bros., Ltd., London, E..

Pipes, &c. (Drain).—J. Duckett & Son, Ltd., Burnley; Hollybrook Brick Co., Ltd., Bristol.

Piping and Fittings (Metal).—E. Bennett & Son, Ltd., London, E.; J. Russell & Sons, Ltd., Wednesbury; Scottish Tube Co., Ltd., Glasgow; E. Smith, Ltd., Wednesbury; J. Spencer, Ltd., Wednesbury; Stanton Ironworks Co., Nottingham; Stewarts & Lloyds, Ltd., Coatbridge and Glasgow.

Pumping Sets.—Dennis Bros. (1913), Ltd., Guildford.

Pumps.—E. Deane & Beal, Ltd., London, E.C.; Four Oaks Spraying Machine Co., Birmingham; Hattersley & Davison, Ltd., Sheffield; Merryweather & Sons Ltd., London, S.E.; G. & W. Purser, Ltd., Birmingham; Shand, Mason & Co., London, S.E.

Ridging (Steel).—Wolverhampton Corrugated Iron Co., Ltd., Ellesmere Port, Cheshire.

Screws (Brass and Roofing).—H. Cox Screw Co., Ltd., Birmingham; Guest, Keen & Nettlefolds, Ltd., Smethwick.

Sheets (Galvanised and Black).—Baldwins, Ltd., London, E.; Birmingham Corrugated Iron Co., Ltd., Widnes; F. Braby & Co., Ltd., Glasgow; Gorse Galvanising Co., Ltd., Llanelly; J. Lysaght, Ltd., Bristol; Neath Steel Sheet & Galvanising Co., Ltd., Neath; Pontnewynydd Sheet & Galvanising Co., Ltd., Pontypool; Raven Tinplate Co., Ltd., London, E.C.; J. Summers & Sons, Ltd., Shotton, Chester; Wellfield Galvanising Co., Llanelly; Whitford Steel Sheet & Galvanising Co., Ltd., Breton

* See also our list of Competitions, Contracts, &c., on p. 248.

Ferry, South Wales; Wolverhampton Corrugated Iron Co., Ltd., Ellesmere Port, Cheshire.

Shelters (Sectional).—J. Summers & Sons, Ltd., Shotton, Chester; Widnes Foundry Co., Ltd., Widnes.

Staples (Fencing).—W. Bain & Co., Ltd., Coatbridge; Guest, Keen & Nettlefolds, Ltd., Rogerstone, Mon.; T. P. Hawkins & Son, Birmingham; J. C. Hill & Co., Ltd., Cwmbran, Mon.; R. Johnson & Nephew, Ltd., Manchester; Rylands Bros., Ltd., Warrington; Shropshire Iron Co., Ltd., Hadley, Salop; R. Thornton, Cleckheaton; Tower Manufacturing Co., Ltd., Worcester; Whitecross Co., Ltd., Warrington; J. Williams & Co. (Wishaw), Ltd., Wishaw.

Steelwork (Constructional).—W. Bain & Co., Ltd., Coatbridge; Bayliss, Jones & Bayliss, Ltd., Wolverhampton; J. Booth & Sons, Bolton; Braithwaite & Co., Ltd., West Bromwich; Davies Bros., & Co., Ltd., Wolverhampton; Hill & Smith, Ltd., Brierley Hill; E. C. & J. Keay, Ltd., Birmingham; A. & J. Main & Co., Ltd., Glasgow; W. Miller & Sons, Ltd., Monmore Green, Wolverhampton; F. Morton & Co., Ltd., Garston.

Stoves and Ranges.—Albion Iron Co., London, E.C.; Falkirk Iron Co., Ltd., Falkirk; Jones & Campbell, Larbert.

Tanks and Cisterns.—F. Braby & Co., Ltd., London, S.E.; Braithwaite & Co., Ltd., West Bromwich; Brown, Lenox & Co. (London), Ltd., London, E.; Davies Bros., & Co., Ltd. Wolverhampton.

Tubbing (Steel).—Davies Bros., & Co., Ltd. Wolverhampton.

Tubes (Well).—J. Russell & Co., Ltd., Walsall.

Urinals (Zinc).—T. Warwick & Son, London, W.C.

Wire (Iron).—Dorman, Long & Co., Ltd., Middlesbrough; Firth Co., Ltd., Warrington; Guest, Keen & Nettlefolds, Ltd., Rogerstone, Mon.

Works Services: Erection of Buildings.—W. E. Blake, Ltd., London, S.W.; W. E. Chivers, Devizes; R. Costain & Sons, Liverpool; Foster & Dicksee, Ltd., Rugby; Higgs & Hill, Ltd., London, S.W.; W. Lawrence & Son, London, E.C.; Leslie & Co., Ltd., London, W.; A. Lloyd, Liverpool; F. G. Minter, London, S.W.; A. Roberts & Co., London, W.; T. Rowbotham, Birmingham; Triggs & Co., London, S.W.; Wilson, Lovatt & Sons, Ltd., Wolverhampton. *Engine.*—Drakes, Ltd., Halifax. *Alteration of Stables.*—J. & W. Orr, Haddington. *Installation of Tanks.*—S. F. Bowser, London, S.W. *Maintenance of W.D. Buildings.*—R. Charlesworth, Hillsborough, Sheffield; Strange & Sons, Bexhill-on-Sea.

H.M. Office of Works.

Building Works.—Avonmouth Grain Stores, Building Work: W. Cowlin & Sons, Bristol; Barry Grain Stores, Building Work: H. Arnold & Son, Ltd., Doncaster; Board of Agriculture, Whitehall-place and Great Scotland-yard, Erection of Temporary Building: Ford & Walton, Kilburn, N.W.; Bristol Channel Ports, Steelwork: Dorman, Long & Co., Ltd., Westminster, S.W.; Cardiff Grain Stores, Building Work: Fred Pitcher, Ltd., London, N.; Erith, Thames Steam Saw Mills, Erection of New Timber Shed: G. H. Gunning & Sons, Erith; London District, Erection of Larder and E.C. Huts: F. Blay, Ltd., Dartford; London District, Supply of Semi-Permanent Huts: James Byron, Ltd., Woolford, Bury; Netley Red Cross Hospital, Erection of Bath Hut: A. E. Jukes & Son, Southampton; Ordnance Survey Overseas Establishment, Erection of Hostels: E. Marshall & Sons, Ltd., Cockburn, Ashton-under-Lyne; Ordnance Survey Overseas Establishment, Joinery, &c.: J. Carmichael, Tooting, S.W.

BUILDERS AND THE COAL PROBLEM.

NUMEROUS statements are daily appearing in the Press in regard to the coal difficulty, and various suggestions have been made as a solution; but, so far, the builder as an important factor appears to have been overlooked. In many of the hotels, public institutions and the better class dwelling houses in London and the provinces which were erected during the last century, large, old-fashioned fire-places with "coal-eating" grates are in use. These grates hold the coal behind massive bars and near the chimney, so that where there is a strong upward draught a very considerable proportion of the benefits of the fuel is lost. Owing to the fact, in some cases, that the surroundings possess some family interest to the occupants, or that the mantel-pieces are valuable and difficult to remove, the question of remedying the evil of wastage is shelved from time to time. Then again, it has probably been considered that the expense of the alteration would absorb a large percentage of the saving in the fuel. These objections can be overcome in such a grate as the "Hue" Patent Adaptable Barless Fire, which consists of a self-contained substantially constructed basket built on scientific lines (not merely a front), with a set of deflecting bricks in two pieces, which can be placed in position without disturbing either the stove or mantel-piece. The time occupied is about three hours, and the cost trifling. The results from a heat-giving and coal-saving point of view are excellent—anything from 33⅓ per cent. to 50 per cent. of the fuel being saved, and a more cheerful fire resulting. Any ordinary builder's handy man can do the job without necessitating the removal of the contents of the room. A booklet, giving further particulars of the "Hue" fire, can be obtained from Messrs. Young & Marten, Ltd., Caledonian Works, Stratford, E. 15.

Specify and use only brands which have passed the test of time.

Leading Cement Brands OF THE British Portland Cement Manufacturers, Limited,

**4, LLOYDS AVENUE,
LONDON, E.C. 3.**

**Telegrams:
"Britporcem, Fen, London."**

**Telephone:
Avenue 6404** (Private Exchange).

PRICES CURRENT OF MATERIALS.

(Owing to the exceptional circumstances which prevail at the present time, prices of materials should be confirmed by inquiry.—Ed.)

*** Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the highest or lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

BRICKS, &c.

Per 1,000 Alongside, in River Thames.	£ s. d.
Best Stocks	2 10 0
Picked Stocks for Facings	3 5 0

Per 1000, Delivered at Railway Depot, London.	£ s. d.		£ s. d.
Flettons	2 3 0	Best Blue Pressed Staffordshire	5 15 0
Best Fareham Red	4 9 0	Do. Bullnose	6 0 0
Best Red Pressed Ruabon Facing	6 0 0	Best Stourbridge Fire bricks	9 5 0

Glazed Bricks—			
Best White, Ivory, and Salt Glazed Stretchers	14 17 6	D'ble Str'tch'rs	20 7 6
Headers	14 7 6	D'ble Headers	17 7 6
Quoins, Bullnose and 4½in. Flats	18 7 6	One Side and two Ends	21 7 6
		Two Sides and one End	22 17 6
		Splays and Squints	19 17 6

Glazed bricks priced at so much each, 25 per cent. advance on list.

Second Quality, £1 per 1,000 less than best.

	s. d.	
Thames Ballast	8 9	per yard, delivered.
Pit Sand	11 0	
Thames Sand	12 0	" " "
Best Washed Sand	12 0	" " "
¾ in. Shingle for Ferro-Concrete	11 6	" " "

Per ton, delivered.

	£ s. d.		£ s. d.
Best Portland Cement	2 15 0	..	2 18 0

Do. £2 11s. 0d. alongside in 80-ton lots.
Ferrocrete 2s. 6d. per ton extra on above.
Best Ground Blue Lias Lime 1 7 6 at rly. depot.
NOTE.—The cement or lime is exclusive of the ordinary charge for sacks. The sacks are charged at 2s. 3d. each and credited at 2s. each if returned in good condition within three months.
Grey Stone Lime ..... 47s. 0d. per ton delivered.
Stourbridge Fireclay in s'cks 37s. 6d. per ton at rly. dpt.

STONE.

Bath Stone—delivered in railway trucks at Westbourne Park, Paddington, G.W.R., or South Lambeth, G.W.R., per ft. cube	s. d. 1 7
Do. do. delivered in railway trucks at Nine Elms, L. & S.W.R., per ft. cube	1 8½
Do. do. delivered on road waggons at Nine Elms Depot	1 9½
Portland Stone— Brown Whitbed, in random blocks of 20 ft. average, delivered in railway trucks at Westbourne Park, G.W.R., South Lambeth, G.W.R., or Nine Elms, or L. & S.W.R., per ft. cube	2 5½
Do. do. delivered on road waggons at Pimlico Wharf or Nine Elms Depot, per ft. cube..	2 6½

White basebed, 2d. per ft. cube extra.

Random Blocks—Per Ft. Cube, delivered at Rly. Dpot.	s. d.		s. d.
Ancaster in blocks	2 0	Closeburn Red Freestone	2 2
Beer in blocks	1 7½	Red & White Mansfield random block	2 9
Grinshill in blocks	2 4	Yellow Magnesian Limestone do. do	3 8
Darley Dale in blocks	2 5		

York Stone—*Robin Hood Quality*. Delivered at any Goods Station London.	s. d.
Scappled random blocks ..... Per Ft. Cube	3 11
6 in. sawn two sides landings to sizes (under 30 ft. super.) ..... Per Ft. Super	3 0
6 in. rubbed two sides, ditto ..... "	3 4
3 in. sawn two sides slabs (random sizes) "	1 3½
2 in. to 2½ in. sawn one side slabs (random sizes) "	0 10
1½ in. to 2 in. ditto, ditto "	0 8½
Hard York— Delivered at any Goods Station London.	
Scappled random blocks ..... Per Ft. Cube	3 6
6 in. sawn two sides landing to sizes (under 40ft. super.) ..... Per Ft. Super	2 8
6 in. rubbed two sides ditto ..... "	2 4
3 in. sawn two sides slabs (random sizes) "	1 3
2 in. self-faced random flags ..... "	0 5½

TILES.

	Per 1,000 f.o.r. London. £ s. d.
Best machine-made tiles or hand-made sand-faced tiles from either Broseley or Staffordshire district	3 0 0
Ornamental ditto	3 2 6
Hip and valley tiles (per dozen)	0 6 0

SLATES.

		Per 1,000 of 1,200 f.o.r. London. £ s. d.
Best Blue Bangor Slates,	20 by 10	13 5 0
" "	16 by 8	6 12 6
First quality " "	20 by 10	12 15 0
" "	16 by 8	6 10 0
Best Blue Portmadoc	20 by 10	13 5 0
" "	16 by 8	6 12 6
First quality " "	20 by 10	12 12 6
" "	16 by 8	6 7 6

WOOD.

Best Building Redwood. Imported sizes.

Deals: 4 in. by 12 in., 4 in. by 11 in., 3 in. by 11 in., 4 in. by 9 in., and 2 in. by 11 in. ..... 3 in. by 9 in., 2½ in. by 9 in., and 2 in. by 9 in. .....

Softwood stocks controlled by the Director of Materials, consequently prices must be withdrawn.

WOOD (*Continued*).

Best Building Redwood.

Battens: 2 in., 2½ in., and 3 in. by 8 in. ..... 2 in., 2½ in., and 3 in. by 7 in. ..... 2 in., 2½ in., and 3 in. by 6 in. .....

Scantlings: 2 in. by 3 in., 2 in. by 3½ in., 2 in. by 4 in., 2 in. by 4½ in. ... 3 in. by 4 in., and 3 in. by 4½ in. .....

Boards: ¼ in., 1½ in., and 1½ in. by 6 in. and 7 in. ..... ¾ in. .....

Seconds .....

Sawn pitch pine logs (about 35 cu. ft. average ..... Do. 6 in. to 10 in. ..

Best Pitch Pine Deals ....
Under 2 in. thick .....

Joiners' Wood

White Sea First Quality Red: 4 in. by 11 in... 3 in. by 11 in., and 2 in. by 11 in. ..... 4 in. by 9 in. ..... 3 in. by 9 in., and 2½ in. by 9 in. ..... 3 in. by 11 in. boards .. 7 in. and 8 in. battens .. 7 in. and 8 in. boards ...

Archangel White Deals— Best 3 in. by 9 in. and 10 in. and 11 in. ..... Seconds, do. ..... U.S. Battens .....

Prepared Floorings and Matchings. Seconds Swedish Red and equal— 1¼ in. by 6½ in. planed and shot ..... 1¼ in. by 6½ in. planed and matched ..... 1 in. by 6½ in. planed and shot ..... 1 in. by 6½ in. planed and matched ..... ¾ in. by 6½ in. planed, matched, and beaded, or V jointed ..... 1 in. by 6½ in. do. .....

Columbian or Oregon Pine, best quality .....

Yellow Pine—First regular sizes .....
Oddments .....
Seconds, regular sizes ..
Oddments .....

Kauri Pine—Planks per ft. cube.....

Softwood stocks controlled by the Director of Materials, consequently prices must be withdrawn.

Dry Wainscot Oak, per ft. super, as inch	0 1 6	..	0 2 0		
¾ in. do. do.	0 1 3	..	0 1 6		
Dry Mahogany—Honduras, Tabasco, per ft. super, as inch	0 2 0	..	0 3 0		
Cuba, Mahogany	0 2 6	..	0 3 6		
Dry Walnut, American, per ft. super, as inch	0 2 0	..	0 3 0		
French, "Italian," Walnut	0 3 0	..	0 5 0		
Teak, per load (Rangoon or Moulmein)	45 0 0		60 0 0		
Do. do. (Java)					
American Whitewood planks, per ft. cube	0 18 0	..	1 1 0		
Glue, per cwt.	5 0 0	..	5 5 0		

METALS.

Joists, Girders, &c.

Rolled Steel Joists, ordinary sections, basis price .....
Plain Compound Girders, ordinary sections .....
Plain Compound Stanchions
Angles, Tees, and Channels, ordinary sections .....
Flitch Plates .....
Cast Iron Columns and Stanchions, plain ordinary patterns .....

Prices controlled by the Ministry of Munitions.

Wrought-Iron Tubes and Fittings— (Discount off List for lot of not less than £4 net value delivered direct from works. 5 per cent. less carriage forward if sent from London stocks.)

	Tubes.	Fittings.
Gas	45	50
Water	40	47½
Steam	35	45
Galvanised gas	27½	42½
" water	18½	40
" steam	12½	37½

L.C.C. Soil Pipe— London Prices.

Pipes Coated.	s. d.		Bends. s. d.		Branches. s. d.
2 in. per yd..	2 8	....	2 1	each	2 6
2½ in. " ..	3 1	....	2 4	"	3 2
3 in. " ..	3 10	....	2 6	"	3 9
3½ in. " ..	4 7	....	3 2	"	4 4
4 in. " ..	4 8	....	3 6	"	5 0

Rain-Water Pipes, &c. London Prices.

Pipe.	s. d.		Bends. s. d.		Branches. s. d.
2 in. per yd..	2 0	....	1 2	each	1 8
2½ in. " ..	2 2	....	1 5	"	2 0
3 in. " ..	2 6	....	1 9	"	2 6
3½ in. " ..	3 0	....	2 1	"	3 0
4 in. " ..	3 3	....	2 6	"	3 8

L.C.C. Drain Pipes,—9 ft. lengths. London Prices. 4 in., 5s. 3d. .. 5 in., 6s. 3d. .. 6 in., 7s. 6d.

	Per ton in London. £ s. d.		£ s. d.
Iron— Common Bars	16 10 0	to	17 0 0
Staffordshire Crown Bars - good merchant quality	16 10 0	..	17 10 0
Staffordshire "Marked Bars"	17 10 0	..	18 0 0
Mild Steel Bars	19 0 0	..	19 10 0

METALS (*Continued*).

	Per ton in London. £ s. d.		£ s. d.
Steel Bars, Ferro-Concrete quality, £19 basis price.			
Hoop Iron, basis price	20 10 0	..	21 0 0
" Galvanised	33 0 0	..	—
(* And upwards, according to size and gauge.)			
Sheet Iron Black— Ordinary sizes to 20 g.	22 10 0	..	23 0 0
" " 24 g.	23 10 0	..	24 0 0
" 26 g.	24 10 0	..	25 0 0
Sheet Iron, Galvanised flat, ordinary quality— Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g.	34 0 0	..	—
Ordinary sizes to 22 g. and 24 g.	34 0 0	..	34 10 0
Ordinary sizes to 26 g.	36 0 0	..	36 10 0
Sheet Iron, Galvanised, flat, best quality— Ordinary sizes to 20 g.	35 10 0	..	—
" " 22 g. and 24 g.	36 0 0	..	—
Ordinary sizes to 26 g.	39 0 0	..	—
Galvanised Corrugated Sheets— Ordinary sizes, 6 ft. to 8 ft. 20 g.	33 0 0	..	—
Ordinary sizes, 22 g. and 24 g.	33 10 0	..	—
Ordinary sizes, 26 g.	32 10 0	..	—
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. to 20 g. and thicker	24 10 0	..	—
Best Soft Steel Sheets, 20 g. and 24 g.	24 15 0	..	—
Best Soft Steel Sheets, 26 g.	26 10 0	..	—
Cut Nails, 3 in. to 6 in.	28 0 0	..	29 0 0

(Under 3 in., usual trade extras.)

LEAD, &c.

	Delivered in London. £ s. d.		
Lead—Sheet, English, 4 lb. and up	38 10 0	..	—
Pipe in coils	39 0 0	..	—
Soil Pipe	42 0 0	..	—
Compo pipe	42 0 0	..	—

NOTE—Country delivery, 20s. per ton extra; lots under 5 cwt., 1s. 6d. per cwt. extra. Cut to sizes, 2s. cwt. extra. Orders for over 1 cwt. Sheet Lead or Pipe, or 28 lbs. Solder should be accompanied by a certificate or licence, which can be obtained from the Director of Materials [A.N.2 (E)], Hotel Victoria, S.W. Smaller quantities than the above can be obtained by making a written declaration to the Manufacturer or Merchant that the metal is wanted for urgent renewals or repairs, and giving the name of the job for which it is required.

Copper— Strong Sheet ....per lb.	0 1 6	..	—		
Thin " .... "	0 1 8	..	—		
Copper nails .... "	0 1 6	..	—		
Copper wire .... "	0 1 8	..	—		
Brass— Strong Sheet .... "	0 1 6	..	—		
Thin " .... "	0 1 8	..	—		
Tin—English Ingots "	0 2 6	..	—		
Solder—Plumbers' "	0 1 1	..	—		
Tinmen's "	0 1 5	..	—		
Blowpipe "	0 1 7	..	—		

GLASS.

English Sheet Glass in Crates of Stock Sizes and in Squares in Ordinary Sizes.

Per Ft.		Per Ft.	
15 oz. fourths	5d.	26 oz. thirds	7½d.
" thirds	5½d.	32 " fourths	8d.
21 " fourths	6d.	" thirds	9d.
" thirds	6½d.	Fluted Sheet, 15 oz.	6½d.
26 " fourths	6½d.	" 21 "	7½d.

Extra price according to substance for squares cut from stock.

English Rolled Plate in Crates of Stock Sizes. Per Ft.

¼ Rolled plate	4d.
⅜ Rough rolled and rough cast plate	4½d.
½ Rough rolled and rough cast plate	4½d.
Figured Rolled, Oxford Rolled, Baltic, Oceanic, Arctic, Stippolyte, and small and large Flemish white	6d.
Ditto, tinted	7d.
Rolled Sheet	5d.
White Rolled Cathedral	5d.
Tinted do.	5½d.

PAINTS, &c.

	£ s. d.
Raw Linseed Oil in pipes ..... per gallon	0 5 6
" " " in barrels .... "	0 5 7
" " " in drums .... "	0 5 10
Boiled " " in barrels .... "	0 5 10
" " in drums .... "	0 6 1
Turpentine in barrels ..... "	0 6 4
" in drums ..... "	0 6 7
Genuine Ground English White Lead, per ton	53 10 0

(In not less than 5 cwt. casks.)

Genuine White Lead Paint— "Blackfriars," "Nine Elms," "Park," and other best brands (in 14 lb. tins) not less than 5 cwt. lots.. per ton delivered	69 0 0
Red Lead, Dry (packages extra) .. per ton	42 0 0

Orders for White and Red Lead and any Paint containing Lead must be accompanied by a certificate or licence, which can be obtained from the Director of Materials [A.N. 2 (E.)], Hotel Victoria, S.W.

Best Linseed Oil Putty ..... per cwt.	0 15 6
Filocol ..... per cwt.	0 13 6

VARNISHES, &c.

	Per gallon. £ s. d.
Fine Pale Oak	0 8 0
Pale Copal Oak	0 10 0
Superfine Pale Elastic Oak	0 12 6
Fine Extra Hard Church Oak	0 10 6
Superfine Hard-drying Oak, for seats of Churches	0 14 0
Fine Elastic Carriage	0 12 6
Superfine Pale Elastic Carriage	0 16 0
Fine Pale Maple	0 10 0
Finest Pale Durable Copal	0 18 6
Extra Pale French Oil	1 1 0
Eggshell Flatting	0 18 0
White Pale Enamel	1 4 0
Extra Pale Paper	0 12 0
Best Japan Gold Size	0 10 0
Best Black Japan	0 16 0
Oak and Mahogany Stain	0 9 0
Brunswick Black	0 8 0
Berlin Black	0 16 0
Knotting	0 18 0
French and Brush Polish	0 12 0

PATENTS.

APPLICATIONS PUBLISHED.*

101,792.—Claude Edgar Fuller: Methods of treating porous blocks.

104,336.—Metal Package Co.: Boxes.

104,159.—Societa per le Costruzioni in Ferro Ditta Francescovilla di Fratelli Bombelli & Co.: Folding doors and partitions.

109,398.—David Alexander Brown: Cylinder or manhole cover.

109,411.—John French Golding: Door holders.

109,333.—Samuel Saunders: Automatic controlling means for heating and lighting installations.

109,415.—Bertram Thomas and Eustace Thomas: Boxes.

109,497.—Charles Henry Kenwright: Compositions for preventing decay of timber, brick, plaster, or stone.

109,504.—Samuel Sutcliffe: Hand snow-plough or scraper.

109,536.—Ernest Spencer: Tip wagons.

109,546.—James Hulse Humphryes: Tanks and like receptacles.

109,571.—Henry Wallworth: Apparatus for riddling.

106,270.—Ernst Krause and Hans Blucher: Manufacture of plastic compositions.

109,598.—Samuel Rowland Parkes: Door bolt plates or lock cases.

109,657.—George Hugh Hadfield and Alfred Edwin Bawtree: Treatments of decorative surfaces.

109,670.—Walter Pickard: Screwdrivers.

109,690.—William Guest and Hugh Lenox: Constructional steel and iron work.

109,705.—Percival James Burgess: Digging spades, forks and shovels.

109,722.—Edward Whittle: Devices for locking or holding the doors and starting mechanism of hoists and lifts.

109,728.—Absalon Wilford Ricks: Table levellers.

109,734.—Frank George Price: Glazing roofs.

109,743.—Frank White: Derricks and their application as appliances to motor wagons.

109,754.—Harold Wade (Langslow Fowler Co.): School chairs.

* All these applications are now in the stage in which opposition to the grant of Patents upon them may be made.

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than* 12 *noon on Wednesday.*

* Denotes *accepted.* † Denotes *provisionally accepted.* ‡ Denotes *recommended for acceptance.*

ASHTON-IN-MAKERFIELD.—For alterations at the Grammar School, for the Lancashire Education Committee:—
*J. Watson, Ashton £258 4

GLASGOW.—For installation of electric light at Robroyston Hospital, for the Corporation:—
*Johnston, Park & Co. £9,187 14 2

HALIFAX.—For electric wiring at Gasworks, for the Corporation:—
*W. T. Glover & Co., Ltd. .. £265 8 8

HALIFAX.—For erection of meter house at Greetland, for the Corporation's Waterworks Department:—
*G. E. Schofield £155 7 6

TYLDESLEY.—For improvement of heating installation at the Technical School, for the Lancashire E.C.:—
*D. Scot & Co., St. Helens £160

TRADE NEWS.

Boyle's latest patent "air-pump" ventilators, supplied by Messrs. Robert Boyle & Son, ventilating engineers, 64, Holborn-viaduct, London, have been employed at King Edward VII Hospital, Newport-road, Cardiff.

We understand that the old-established and well-known business of Messrs. E. H. Shorland & Brother, Failsworth, Manchester, has been disposed of by private treaty. In future all enquiries, orders and correspondence, relating to their *ventilating* department (including the supply of Shorland's exhaust ventilators and fresh-air inlets, &c.), should be addressed to Messrs. Henry Hargreaves & Sons, ventilating engineers, Bury, Lancashire. All enquiries, orders and correspondence relating to the patent "Manchester" stoves and grates, and the *heating* department generally, should be addressed to Messrs. George Wright, Ltd., of Burton Weir Works, Rotherham; 155, Queen Victoria-street, London, E.C.; and 63, Bridge-street, Manchester.

NEW COMPANIES.

The undermentioned particulars of new companies recently registered are taken from the Daily Register compiled by Jordan & Sons, Ltd., Company Registration Agents, Chancery-lane, W.C.:—

LEONARD FAIRCLOUGH, LTD. (148,585), 2, Chapel-street, Adlington, Lancaster. Registered October 1. To acquire and take over as a going concern the business of a builders' contractors' and monumental mason. Nominal capital, £10,000 in 10,000 £1 shares.

SILWOOD CONSTRUCTION COMPANY, LTD. (148,517), Silwood-street, Deptford, S.E. Registered September 20. To carry on the business of builders, contractors, sawyers, timber merchants, &c. Nominal capital £5,000, in 5,000 £1 shares.

AUSTRIAN and RIGA.
FIRST-CLASS, MILD GRAINED, DRY
WAINSCOT OAK.
J. GLIKSTEN & SON, Ltd.,
Carpenter's Road, Stratford, E.
Telegrams: "Gliksten, Strat, London." Telephone No.: Eastern 971 2 lines.

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Security: £6,652,243.
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EMPLOYERS' LIABILITY.
MARINE.
Head Offices { 45, Dale Street, Liverpool. 155, Leadenhall Street, E.C.

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AUSTRIAN, RUSSIAN and JAPANESE
SYDNEY PRIDAY,
KING WILLIAM HOUSE, 2a, Eastcheap, LONDON, E.C
Depot: Wainscot Sheds, Millwall, E. *T.N.: Avenue 667.*

J. J. ETRIDGE, Jr. LTD
SLATE MERCHANTS,
EXPERTS IN
SLATING, TILING.
STRIPPING AND RELAYING.
Telephone: Avenue 4940 (two lines), or write
Bethnal Green Slate Works,
BETHNAL GREEN, LONDON, E.

Asphalte.—The Seyssel and Metallic Lava Asphalte Co. (Mr. G. F. Glenn), Office, 42, Poultry, E.C.—The best and cheapest materials for damp-courses, railway arches, warehouse floors, flat roofs, stables, cow-sheds and milk-rooms, granaries, tun-rooms, and terraces. Asphalte Contractors to Forth Bridge Co. T.N. Central 2644.

GALVANIZED CORRUGATED ROOFING SHEETS
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Perfectly and thickly coated with zinc, insuring real durability.

GOOD STOCKS
kept at our London Works in all the usual lengths and gauges.
Prompt delivery *can be given, whether straight sheets or curved to any ordinary radius.*
FREDK BRABY & CO. Ltd. 352 to 364, Euston Road, N.W. 1 Ida Works, Deptford, S.E. 8 } LONDON.

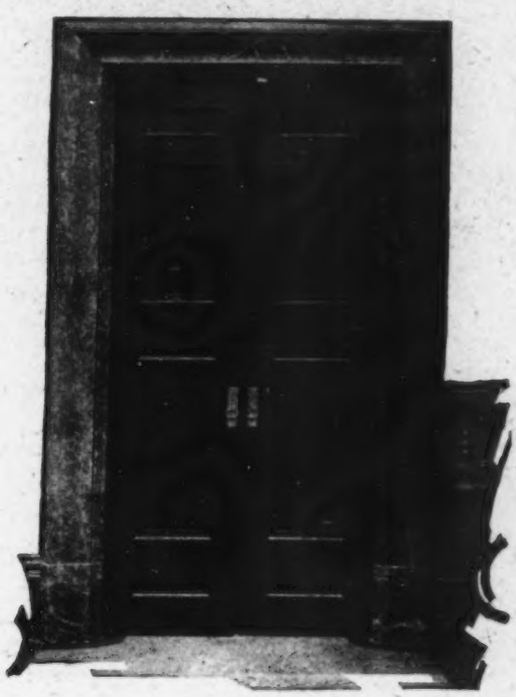
ART METAL CONSTRUCTION CO LTD

RONEO BUILDING
586 HOLBORN E.C

ASSOCIATED WITH RONEO LTD

Propr of St PANCRAS IRONWORK Co and CHECKFIRE DOOR Co:

These Steel Lockers are in great demand for Munition Works, Banks, Offices, Warehouses and Factories. They provide a lock-up compartment for each employee, and are ventilated in such a way that damp clothing is quickly dried.

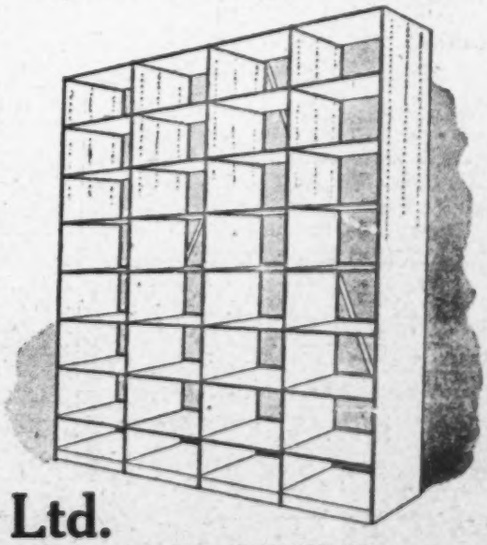


Double-leaf Steel Door, as supplied to H.M. Office of Works for National Gallery.

If all Fittings and Fixtures were made of Steel

there would be so little to burn in a modern building that fires would indeed be few and far between.

Art Metal fittings compel satisfaction in every way. They will last as long as the strongest concrete structure, are fire-resisting and extremely smart and well finished.



The three illustrations herewith are typical examples of these fittings, which also include steel desks, tables, counters, files, partitions, stairways, etc. They can be supplied in a large variety of sizes and shades of specially hardened enamels or made to Architect's own specification to meet individual requirements.

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'Phone: HOLBORN 6622.
Works: Romford and Holloway.

Telephones: EAST 1760, 1761] W. DUFFY'S PATENT [Telegrams: "DOWELLED, LONDON."

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AND ALL DESCRIPTIONS OF HARDWOOD AND CREOSOTED DEAL PAVING.

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MISCELLANEOUS.

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WANTED IMMEDIATELY.—15,000 to 20,000 STOCK BRICKS.—Particulars and price, CRITTALL, Braintree.

WANTED.—Small Quantity of USEFUL PACKING, short ends of Banks, etc. Also SCAFFOLD BOARDS.—Reply to JAMES TAYLOR & BATES, Ltd., Bridge Wharf, Chertsey.

WANTED.—Large Quantity of SCAFFOLD BOARDS; also SCAFFOLD POLES, 20 ft. and up.—State particulars, prices, and where to be seen, to Box 235, Office of "The Builder."

WANTED.—FIFTY SQUARES, 8 in. × ¾ in. ROUGH BOARDING.—CLOUDESLEY WORKS, Cloudesley-Place, Islington, London, N. 1.

POLES and BOARDS for DERBYSHIRE. NEW or SECOND-HAND.
In small or large parcels, WANTED near Buxton. State price, quantity and lengths. 21 to 25 ft. for Poles, and Boards 12 ft. and upwards. Usual thickness and hooped.—Reply
BOVIS., H.M. Stores,
HARPUR HILL SIDINGS,
Nr. Buxton,
Derbyshire.

WANTED.—A Bradley & Craven or similar) Composition Pressed BRICK-MAKING MACHINE, suitable for large output, and all in good condition.—Reply, giving full particulars, to J. B. CATTERALL, 84, Avondale square, Old Kent-road, S.E. 1.

SCAFFOLDING WANTED.—Poles 12 ft. and up; and Scaffold Boards.—Particulars to F. G. MINTER, Contractor, Putney.

WANTED TO PURCHASE.—Quantity of SCAFFOLD BOARDS, also SCAFFOLD POLES, 20 ft. and up. State particulars, prices, and where to be seen.—M., 60, Mervan-road, London, S.W. 2.

FOR SALE.—IRON PRINCIPALS, IRON DOORS (suitable for bomb-proof shelters), two Strong Room and number of Armoured Doors, number of Flitch and other Iron Plates, Guard Bars, etc. On view.—1a, Downs Park-road, Dalston, E. 8.

LEWIS & LEWIS, Ltd.,
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LADDERS, STEPS, TRESTLES.
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OF EVERY DESCRIPTION
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Estimates free.
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Green St., Paddington Green.
T.N.: Padd 1717 (2 lines).
T.A.: "LADDERS, London."

MISCELLANEOUS—*Continued.*

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FOR SALE.—7 ft. 6 in. SYKES MORTAR MILL, mounted on P.P. base. Price £40, a bargain.—W. VERNON & SONS, 4, Lloyd's-avenue, E.C. 3.

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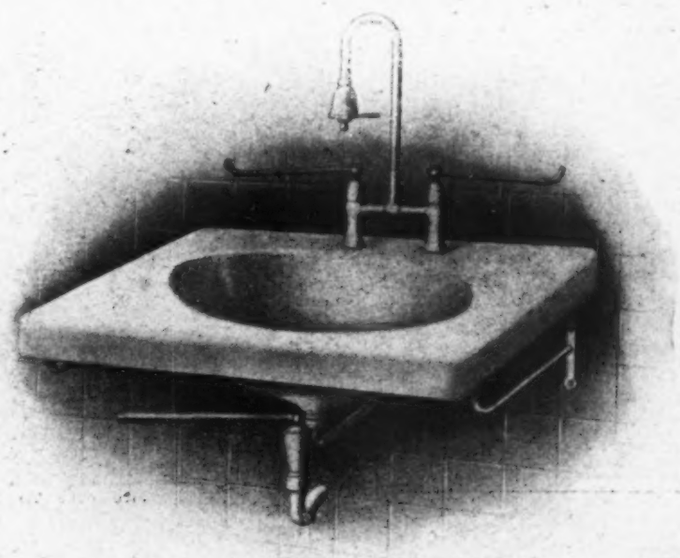

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And MATEX costs so little when you consider what it does, that you'll save not only your roofs but a lot of money once you get to using MATEX.

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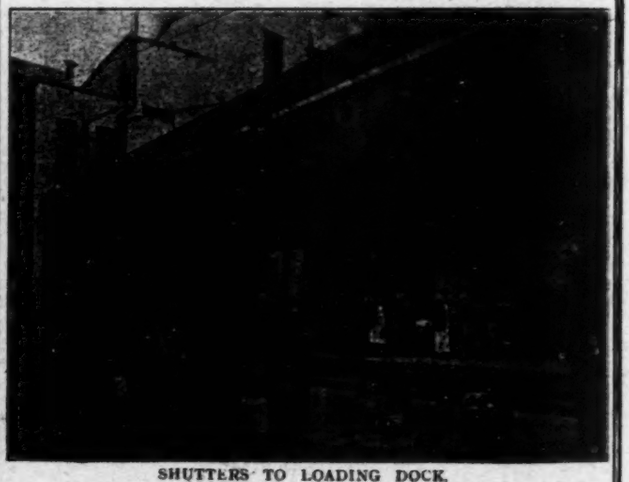

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